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ABSTRACT

This proceedings include the following papers: "Developing a District Building Based Team" (Kathy Heller and Michelle Till); "Wheelchair Rhythmic Sportive Gymnastics" (Gertrude Krombholz and Atja Gotzova-Kumpf); "Team Building in Inclusion Settings" (Robert Weber); "Inclusion: Identifying Student Needs" (Jeff Runge); "Overview of the Role of Aquatics for Persons with Different Abilities" (Lorraine Bloomquist); "Wheelchair Dance" (Gertrude Krombholz); "Achieving the "Ultra-Stretch"--A Method for Increasing Flexibility and Fitness for Everyone" (Christine Stopka); "Traditional Korean Play: Jegi-Chagi for Students with Physical Disabilities" (Yong-Ae Whang); "Why Choose Horseback Riding?" (Natalie Bieber); "Three Decades of Adapting Activities to Maximize Student Skill Development" (James Cowart); "Go for the Gold: Common Sense Strategies for Working with ADHD Children" (Michael Davey); "Let's Work Together: Team Building Pool Games" (Phillip Conatser); "The Fitness Clinic for Physically Disabled at San Diego State University: A Model for the Future" (Peter Aufsesser); "Competitive Wheelchair Athletics" (Stefanie Opsal and Amy Crowley); "Appropriate Inclusion in Physical Education: From Perceptions to Practical Pointers" (Nathan Murata and Samuel Hodges); "Adapted Physical Education-Accommodation or Innovation?" (Laura Hunter); "A Practical Application of Aquatics for Persons with Disabilities" (Lorraine E. Bloomquist); "AAALF and the Alliance: Partners in Fitness Education" (Janet A. Seaman); "Raising a Child with Disabilities in the Family" (Catherine Crain and others); "Preparing Students with Disabilities for Spring Break '97" (Jayne Swercinski and Lisa Burres); "The Paralympic Movement: Yesterday, Today and Tomorrow" (Robert D. Steadward); "Olympic Access: Design for Athletes, Spectators, and Employees" (Kim Beasley); "Resistive Exercise for Older Adults and Cardiac Patients: Practical Considerations" (Loran D. Erdmann); "Basic Skills and Inclusion of Various Ability Levels" (Robert Weber and Others); "Using Summer Camps to Provide a Developmental Sequence for Physical Activity" (Stefanie Opsal and Amy Crowley); "Moving to a Theme" (Carol A. Ryan); "Inclusion: Modifying Games and Sports Activities for Individuals with Disabilities" (Fred Schack); "Try-Umph-Promoting Sport, Fitness, and Recreation for Youth with Physical Disabilities" (Barbara Anthony); "Trouble or Triumph: Novel Falls Prevention Strategies for Older Adults with Disability" (Mark Alexander Hirsch);

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"Liability Concerns for Working with Individuals with Disabilities" (Peter Aufsesser); "Pain Free Exercise Training for People with Peripheral Vascular Disease?" (Christine Stopka and others); "Integration in Wheelchair Athletics at University of Wisconsin-Whitewater" (Stefanie Opsal and others); "A Systematic Application of Activity-Based Intervention in Physical Education Programming for Preschoolers with Disabilities" (Ronald Ricardo Smith); and "Introducing Kids to Sports" (Paddy Rossbach). Some presentations contain references. (CR)

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5th National Conference on Adapted Physical Activity

Achieving a Balance

April 3–5, 1997
Western Illinois University
Macomb, Illinois

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SESSIONS

All sessions are held in Brophy Hall unless otherwise stated.
Posters will be displayed in the Lamoine Room of the University Union during lunch and dinner on Thursday, April 4.

Thursday, April 3, 1997

2:30–3:30 p.m. Registration — **Brophy 2nd-Floor Lobby**

3:30 p.m. **Pre-Conference Workshop** — **Room 235**
IEP Development and Program Planning Utilizing the Test of Gross Motor Development (TGMD)
Dale A. Ulrich, Indiana University

Friday, April 4, 1997

8:00–9:00 a.m. Registration — **Brophy 2nd-Floor Lobby**

9:00 a.m. **Session 1**

Developing a District Building Based Team Kathy Heller and Michelle Till Central Grade School, Lewistown, Illinois	p. 1	**Room 224/226**
Wheelchair Rhythmic Sportive Gymnastics Gertrude Krombholz and Atja Götzova-Kumpf Technische Universität München, Germany	pp. 2–3	**Room 236**
Team Building in Inclusion Settings Robert Weber, Bemidji State University	pp. 4–6	**Room 235**
Inclusion: Identifying Student Needs Jeff Runge, Yorkwood Elementary School Little York, Illinois	pp. 7–8	**Gymnasium**
Overview of the Role of Aquatics for Persons with Different Abilities Lorraine Bloomquist, University of Rhode Island	p. 9	**Pool**

10:15 a.m. **Session 2**

Can't Motivate—Can't Educate . . . Preventive Techniques to Reduce Inappropriate Behavior Ron French, Texas Woman's University		**Room 224/226**
Wheelchair Dance Gertrude Krombholz Technische Universität München, Germany	pp. 10–12	**Room 236**

	Achieving the "Ultra-Stretch"—A Method for Increasing Flexibility and Fitness for Everyone Christine Stopka, University of Florida	pp. 13–15	**Room 235**
	Traditional Korean Play: Jegi-Chagi for Students with Physical Disabilities Young-Ae Whang, Kyoung Hee University, Korea	pp. 16–17	**Gymnasium**
11:30 a.m.	**Lunch Session** *Why Choose Horseback Riding?* Natalie Bieber, Steamboat Springs, Colorado	pp. 18–20	**Lamoine Room, University Union**
1:15 p.m.	**Session 3**		
	Three Decades of Adapting Activities to Maximize Student Skill Development James Cowart, California School for the Blind	p. 21	**Room 224/226**
	Go for the Gold: Common-Sense Strategies for Working with ADHD Children Michael Davey, Western Illinois University	pp. 22–23	**Room 236**
	Creative Movement for the Integrated Classroom Heidi Clemmens, Harry Rosa, Erin Ellerbroek Western Illinois University		**Dance Studio, Room 200**
	Tension Releasing Exercises, Gait Training and Running for Those with Ambulatory Disabilities Paddy Rossbach, The Joyce Center, New York		**Gymnasium**
	Let's Work Together: Team Building Pool Games Phillip Conatser, University of Virginia	p. 24	**Pool**
2:30 p.m.	**Session 4**		
	The Fitness Clinic for Physical Disabled at San Diego State University: A Model for the Future Peter Aufsesser, San Diego State University	pp. 25–28	**Room 224/226**
	Competitive Wheelchair Athletics Stefanie Opsal and Amy Crowley University of Wisconsin–Whitewater	pp. 29–31	**Room 236**
	Appropriate Inclusion in Physical Education: From Perceptions to Practical Pointers Nathan Murata, University of Toledo Samuel Hodges, Ohio State University	pp. 32–38	**Room 235**
	Adapted Physical Education—Accommodation or Innovation? Laura Hunter, The GymSkills Program, Toronto, Ontario, Canada	p. 39	**Gymnasium**
	A Practical Application of Aquatics for Persons with Disabilities Lorraine Bloomquist, University of Rhode Island	p. 40	**Pool**

3:45 p.m. **Session 5**

AAALF and the Alliance: Partners in Fitness Education — pp. 41–42 — **Room 224/226**
Janet Seaman
American Association for Active Lifestyles and Fitness

PANEL DISCUSSION: Raising a Child with Disabilities in the Family — pp. 43 — **Room 236**
Catherine Crain, Michael Davey, Loran Erdmann, West Central Illinois

Fun and Innovative Activities for Preschoolers with Disabilities — **Room 235**
Lisa Silliman-French
Denton Independent School District, Texas

Preparing Students with Disabilities for Spring Break '97 — pp. 44–45 — **Gymnasium**
Jayne Swercinski, Lisa Burres
Maple Valley State School, Kansas City, Missouri

6:00 p.m. **Dinner Session** — **Lamoine Room, University Union**

The Paralympic Movement: Yesterday, Today and Tomorrow — pp. 46–47
Robert Steadward, International Paralympic Committee

Saturday, April 5, 1997

7:00–7:30 a.m. **Registration** — **Brophy 2nd-Floor Lobby**

7:30 a.m. **Session 6**

Can't Motivate—Can't Educate . . . Intervention Techniques to Reduce Inappropriate Behavior — **Room 224/226**
Ron French, Texas Woman's University

Olympic Access: Design for Athletes, Spectators, and Employees — pp. 48–51 — **Room 236**
Kim Beasley, Paralyzed Veterans Administration, Washington, D.C.

Resistive Exercise for Older Adults and Cardiac Patients: Practical Considerations — pp. 52–53 — **Room 235**
Loran Erdmann, Western Illinois University

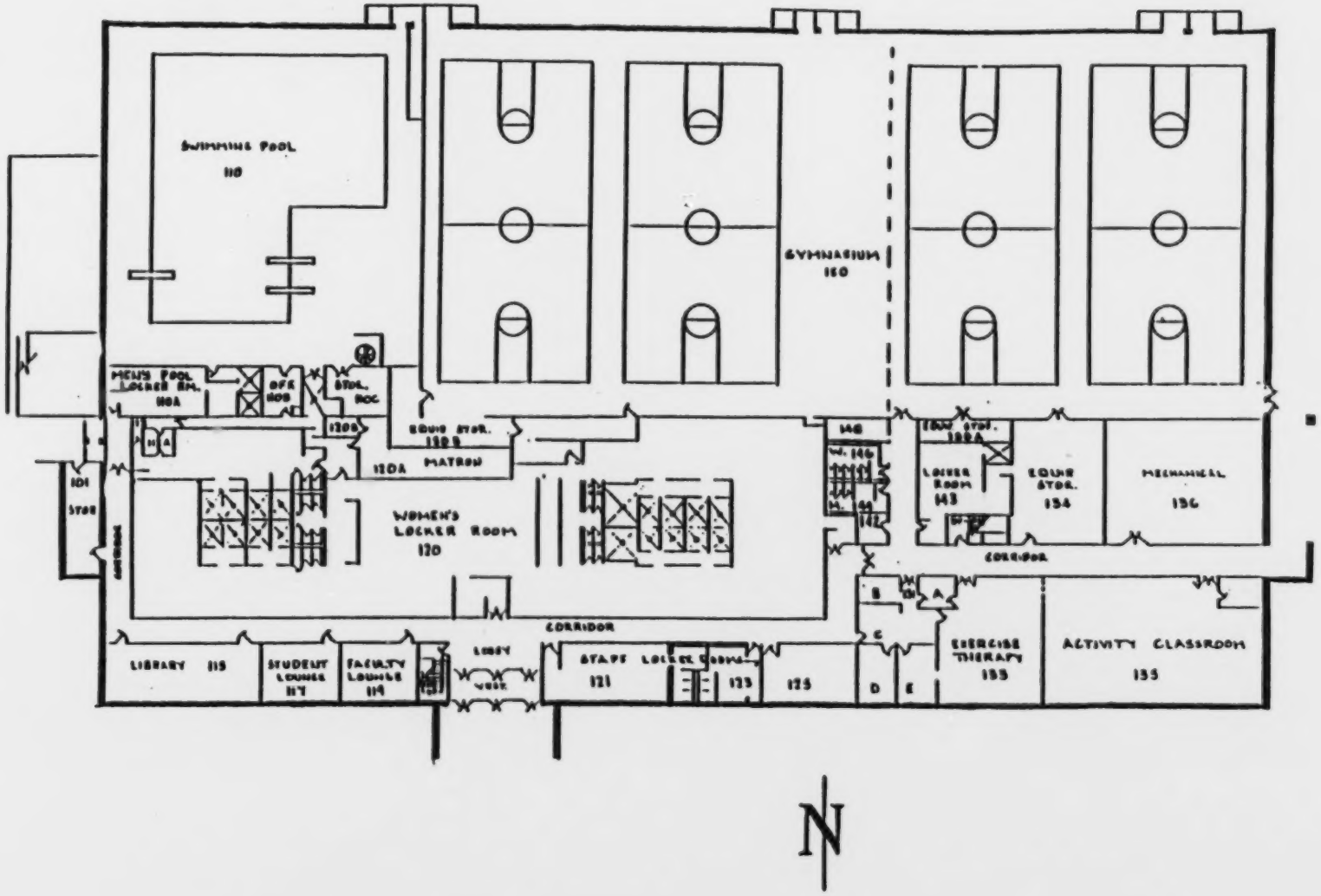
Basic Skills and Inclusion of Various Ability Levels — pp. 54–55 — **Gymnasium**
Robert Weber, Bemidji State University

9:00 a.m. **Session 7**

Creating Opportunities in Sports for the Physically Challenged — **Room 224/226**
Celia Southward, City of Windsor, Ontario, Canada

Using Summer Camps to Provide a Developmental Sequence for Physical Activity — pp. 56–57 — **Room 236**
Stefanie Opsal and Amy Crowley
University of Wisconsin–Whitewater

	Moving to a Theme Carol Ryan, Northern Kentucky University	pp. 58–59	**Room 235**
	Inclusion: Modifying Games and Sports Activities for Individuals with Disabilities Fred Schack, George Mason University	pp. 60–62	**Gymnasium**
10:15 a.m.	**Session 8**		
	Try-Umph—Promoting Sport, Fitness, and Recreation for Youth with Physical Disabilities Barbara Anthony, Bloorview MacMillan Centre, Canada	p. 63	**Room 224/226**
	Trouble or Triumph: Novel Falls Prevention Strategies for Older Adults with Disability Mark Hirsch, Johns Hopkins University School of Medicine, Baltimore, Maryland	pp. 64–67	**Room 236**
	Practica in Wheelchair Dance and Rhythmic Sportive Gymnastics Gertrude Krombholz and Atja Götzova-Kumpf Technische Universität München, Germany		**Room 235**
11:30 a.m.	**Lunch Session** *Liability Concerns for Working with Individuals with Disabilities* Peter Aufsesser, San Diego State University	**Lamoine Room, University Union** pp. 68–70	
1:15 p.m.	**Session 9**		
	Pain Free Exercise Training for Individuals with Peripheral Vascular Disease? Christine Stopka, University of Florida	pp. 71–75	**Room 224/226**
	Integration in Wheelchair Athletics at University of Wisconsin–Whitewater Stefanie Opsal, Erin Sheely, and Amy Crowley University of Wisconsin–Whitewater	pp. 76–77	**Room 236**
	A Systematic Application of Activity-Based Intervention in Physical Education Programming for Preschoolers with Disabilities Ronald Ricardo Smith, Indiana University	pp. 78–79	**Room 235**
	Utilizing Developmentally Appropriate Equipment for Students with Special Needs Becky Baker and Sally Monroe Kentucky Valley Education Cooperative		**Gymnasium**
2:30 p.m.	**Session 10**		
	Introducing Kids to Sports Paddy Rossbach, The Joyce Center, New York	pp. 80–82	**Room 224/226**



Brophy Hall Lower Floor Plan

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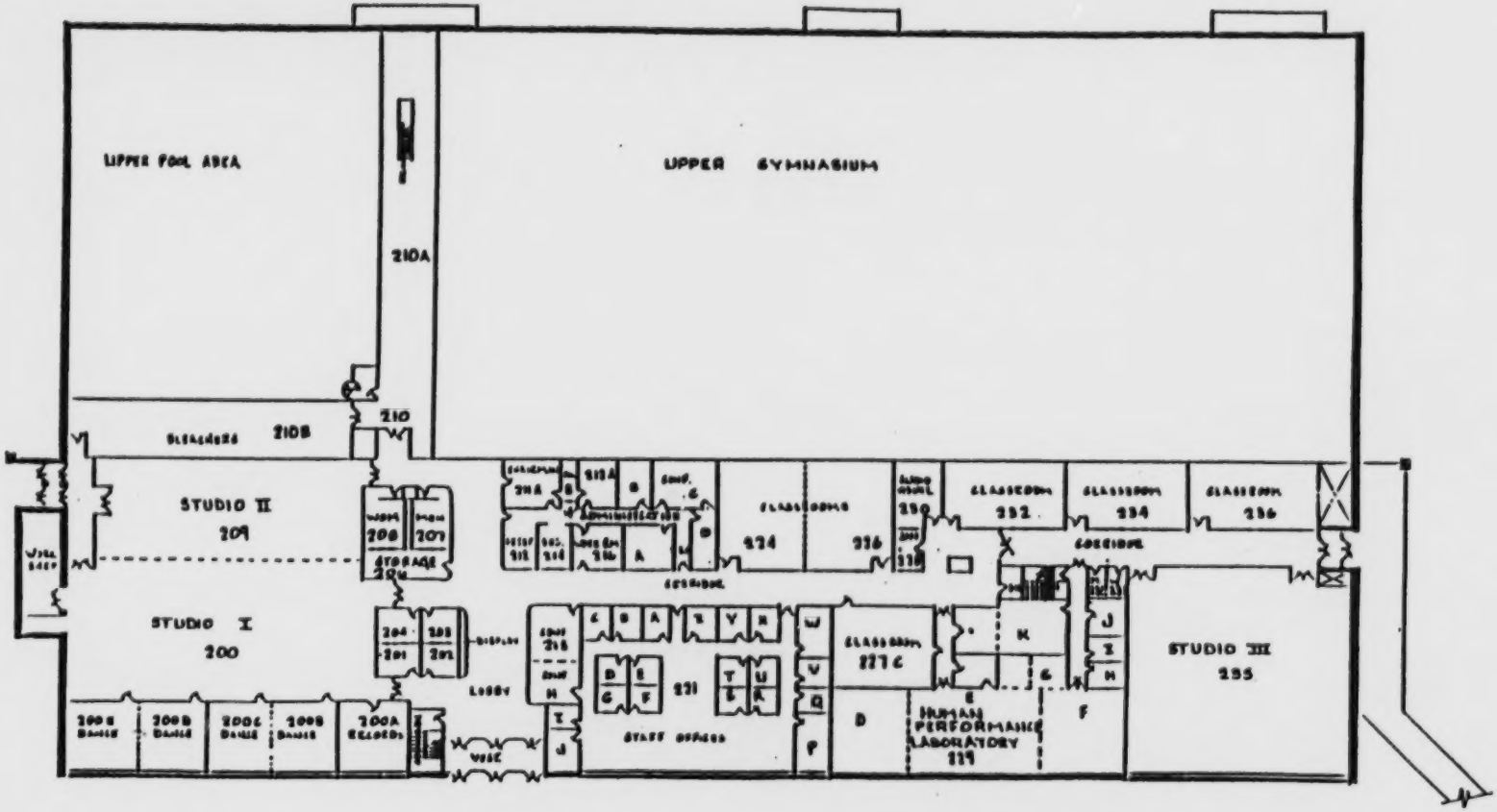

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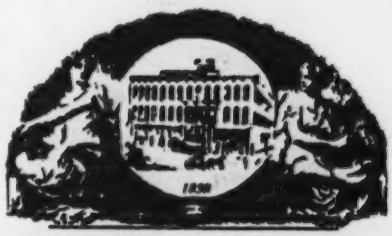

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Developing a District Building Based Team

Kathy J. Heller and Michelle Till
Central Grade School, Lewistown, Illinois

The purpose of developing a building based team is to open communication between regular education staff and special education staff and administration and support staff.

The outcome hoped for by having a building based team in place is collaboration among regular education and special education teachers. A building based team provides the opportunity to brainstorm curriculum or student needs, and the chance to share knowledge among various departments.

The design to follow to create a district building based team is as follows. First of all, the team will need teacher input. The following format is easy to implement and use in any district and provides a checklist and interventions list to the referring teacher or teachers. Once, the teacher or teachers complete the checklist and review the intervention list, the teacher completes a teacher request form and attends the next building based team meeting to discuss the student. The team collaborates and brainstorms with the teacher. Then, the team completes the summary report as a group and makes suggestions to the teacher. The teacher returns to the classroom with an opportunity to try the suggestions. At a later date, the teacher returns to the building based team with other concerns or notifies them of the success of the previous recommendations. At this time, the team may suggest another avenue to try in the classroom or may feel it is time to make a referral for special education testing or may suggest continuing to do what was suggested previously.

The process I used to implement a building based team for my district was as follows. First, I notified the entire staff of the building based team being a part of our special education/regular education team plan. Then, I provided the entire staff with an initiating a request form and checklist. They were notified to bring the paperwork to the building based team completed, in order to save time during the meeting.

The criteria I used to select a building based team was the entire special education staff, the special needs staff, one regular education teacher per special education program and one administrator.

At the first building based team meeting, a chairman was selected to run the meetings, to manage paperwork and meeting recommendations, and to promote workshop opportunities or staff in-services for the team.

During the presentation, forms for the building based team will be presented. Role playing and questions and discussion will be held with those present having the opportunity to participate.

The goals of the building based team are to respond in a timely manner with early intervention to student problems in the regular division classroom; to provide adaptations to aid students in functioning more optimally in the regular division classroom; and to eliminate premature referrals for testing and social work services, by providing a suitable team for the regular education teachers to brainstorm with.

Wheelchair Rhythmic Sportive Gymnastics

Gertrude Krombholz and Atja Götzova-Kumpf
Technische Universität München, Germany

Rhythmic Sportive Gymnastics for able-bodied is a very young sport which shows the feminine elegance in movement, expression and harmony. This sport was created in the eastern part of Europe. The first World Championships took place in 1963 and were organised by the International Gymnastics Federation. The IOC has accepted Rhythmic Sportive Gymnastics as an Olympic sport since the Olympic Summer Games in Los Angeles in 1984 as individual competitions in rope, hoop, ball, club and ribbon. Since the Olympic Games in Atlanta there is also a competition in group-gymnastics.

The idea to create Wheelchair Rhythmic Sportive Gymnastics was founded more than ten years ago by Dr. Gertrude Krombholz who developed Wheelchair Dance in 1973 at the "Technischen Universität München"/Germany. Some simple practical experiences with ribbon, ball, hoop and rope were the basis for a scientific paper by the student Monika Schmidbauer (published 1983).

The idea was born again at the Paralympic Games in Barcelona in 1992 noticing the agility of three hundred or so sportive women in wheelchairs. In half a year Atja Götzova-Kumpf, a former Czechoslovakian champion in Sportive Rhythmic Gymnastics, and Dr. Gertrude Krombholz together with a team of sportstudents of the "Technische Universität München" and wheelchair dancers of the "Universitäts-Sportclub München" worked out basic movements of ribbon, ball and hoop by way of improvisation.

In the following years Atja Götzova-Kumpf choreographed a lot of combinations with ribbon, ball and hoop. The following categories—similar to Wheelchair Dance—were the basis:

- **Single Gymnastics**
  A female wheelchair user is moving alone - without any partner - similar to the official sport.

- **Combi Gymnastics**
  A female wheelchair user is moving with a non-disabled female partner demonstrating new integrative possibilities, especially creative motives for the disabled. This is performed in locomotion through different contacts with hand or apparatus. The repertoire of movement may then be extended by exchanging the apparatus between the two partners.

- **Group Gymnastics**
  Three female wheelchair users and three able bodied female partners perform a choreography in which there are many possibilities of working with different apparatus and exchanging them. This is done through a permanent adaptation to the music.

The following techniques have been worked out for three kinds of apparatus:

Ribbon
- **Single Gymnastics**
  - Swings, Circles, Figure-Eights in different planes (horizontal, frontal, sagittal forwards, sagittal backwards)
  - Snakes and Spirals in different planes (horizontal, vertical)—stationary and in locomotion with turns backwards and rolling forwards
- **Combi Gymnastics**

Ball
- **Single Gymnastics**
  - Bouncing
    - stationary with both hands, with one hand, with fist, back of the hand, elbow
    - in locomotion with turns backwards and forwards, rolling forwards

- Throwing—Catching in different planes (sagittal, frontal)
  - stationary with both hands, with one hand, also catching behind the reverse
- Rolling on the floor
  - stationary or in locomotion
- Rolling on the body
  - on both arms, on one arm, on the front or back of the arms, on the back, about the hands
- **Combi Gymnastics**

Hoop
- **Single Gymnastics**
  - Rotating in different planes (frontal, sagittal, horizontal)
    - around a hand or another part of the body (neck)
  - Rolling on the floor (in a straight line, in a curve, or with return roll boomerang)
  - Throwing—Catching
    - from rotating movement
    - throwing from a swinging movement in vertical plane
    - also with turns around horizontal axis
  - Turning
    - around the centre in different planes (frontal, horizontal, sagittal)
    - spinning the hoop on the floor around its vertical axis
    - swings, circles, figure-eights in different planes (horizontal, vertical)
- **Combi Gymnastics**

The following applies to all apparatus:

- **Group gymnastics**
  The typical character of the group exercise is the participation of each gymnast in the homogeneous work of the group in a spirit of cooperation. "Relationship between wheelchair gymnastics and able bodied partners" and "group work" do not only mean "physical contact between the gymnasts (like shoulder, hand)" but basically means:
  - exchange of apparatus,
  - displacement of the gymnasts,
  - changes in formations,
  - performance with a partner of similar or different elements,
  - variety in the elements, in the dynamics, in the use of space and originality.

The result of this work was recorded on a video. In August 1993 this video was awarded with the 3rd prize out of 55 entries at the international film contest of the 9th "International Symposium on Adapted Physical Activity" in Yokohama/Japan. The award was presented by His Imperial Highness Prince Tomohito of Mikasa.

For the further development of this sport it is necessary to organise workshops on regional, national and international levels. All countries which are practicing Rhythmic Sportive Gymnastics as an official sport are predestinated to develop special techniques in Single Gymnastics for wheelchair gymnastics.

The aims should be in

- **motor aspects**
  - improvement of body position, mobility, agility, flexibility
  - improvement of coordination skills
  - learning Rhythmic Gymnastics skills
  - adjusting wheelchair movements to music

- **medical aspects**
  - improvement of heart and circulation functions
  - general activation of skills performance
  - compensation against lack of movements

- **psychological aspects**
  - building up self-confidence
  - improving self-expression
  - strengthening individual personality

- **social aspects** (in Combi or Group Gymnastics)
  - increasing communication
  - exercising in group behavior
  - fostering integration

No doubt it will still take a long time before Wheelchair Rhythmic Sportive Gymnastics will be recognised as a specific discipline by the national and international sport organisations for the disabled. Perhaps soon Rhythmic Wheelchair Sportive Gymnastics will be accepted by IPC and therefore become part of the Paralympic Games.

Team Building in Inclusion Settings

Robert Weber, Stella Fern, Greg Binstock, Dean Larimer, and Daniel Pemble

Team Machine

Team Machine is a team building game that can involve students in all grades and disabilities which makes it ideal for inclusion settings.

The instructor introduces the game by telling the students they are the insides of a large machine or clock. A large machine or clock has many moving parts. The parts all fit together and without one another will not work. In this particular game the students can touch one another with permission from their neighbor. They have to intertwine as close as possible and use a lifting, pushing, pulling, turning, twisting, leg lifting, arm twirling, etc., motion. The instructor should get an old clock or make a marble works game example and show the students what they should be thinking about. All the parts work together, in the same motion but they all are different shapes and sizes.

The game is played with one person standing in the middle of the gym and others on the side. The person starts by doing a gross motor movement, either with his/her hands, arms, legs, head or whole body. They can start by bending at the waist, by going from a stand, to a front forward bend. (After doing this game a couple of times the students should add a sound to their motion).

Then the instructor chooses or students volunteer to be next. They will go to the center of the gym and join the first student who is doing his/her action/motion. That second student will choose an action/motion that fits with the first student's. If the first student is bending over forward and then standing up straight, the second student could stand in front of the first person, facing him/her. When that first person is standing up straight, the second person may be facing him/her. When that first student is standing up straight, the second student could lift his/her right bent leg up. This would be the beginning of the synchronized machine. All the other students would join in and add their very own individualized skill.

After the whole class is participating, everyone will observe and take note of how the game works.

All students can participate.

The wheelchair students who have upper body motion can wheel close to another student and add their motion. Their motion could be lifting or swinging their arms out in the adjacent student's motion, or they can use their wheelchair as the motion. Students in motorized wheelchairs who have limited use of their bodies can also use the wheelchair for the motion. They can go back and forth or side to side having the sound of the wheelchair motor part of the motion. Students who are very limited can team up with a peer and the two of them together can add the action/motion. A student who has cerebral palsy could have a student stand back to back with them and lift their arms out to the side while the other students next to them are swinging in another direction.

Visually impaired students could be guided to the team machine and take hold of another student's arm and feel the motion or be told their neighbor's action/motion. They in turn could add or be part of that motion. The student who joins up with them can help that visually impaired student have more of a solid ground. It would help that visually impaired persons have a support on either side of them.

The hearing impaired student would need some good imagination and motor skills to join the group.

When all the students are in the team machine, the instructor will say, "on the count of 3 everyone stop," this will help the first number of students not get tired.

The instructor needs to give the students a full range of ideas when they are thinking of what and how they can contribute to the team machine. An individual approach would be to have the students think of what action/motion they could do as they are standing by themselves in the gym. Or take two or three students and have them make a mini-team machine.

When the students have all done one team machine, they can start over. You will be amazed as to the new and inventive ideas that will come up. This activity is very useful with all ages and even adults.

Equipment needs: None

Mission Impossible for Integrated Classrooms

Goal: Teach or expose students to team-building skills; creative thinking; jumping, balancing and other locomotor skills.

The playing field is ideally suited for a gymnasium with five mats strategically placed and other objects such as frisbees and ropes scattered throughout.

This game requires advanced team work. The class is divided into two or more groups or teams. The object of the game is to get your team from one side of the gym to the opposite before the other team reaches their goal side. The game is named "impossible" because it is an impossible task to complete without working together. Each team has two scooters.

There are four basic rules:

1. At no time can a student make contact with the gymnasium floor with their body (except on either end of the court). If a student does make contact the student is ordered to start at the beginning of the course again.
2. One team cannot infringe on the other team's progress to reach their side.
3. Team work and creative thinking are encouraged.
4. Students may pick up the ropes and frisbees to help advance, though students cannot use frisbees as shoes (shuffling across the floor like skis), nor may students move the mats.

** Reintroduce the game often; make note of the progress each class makes. Discuss with the students on what makes a group successful and conversely, what makes the game "impossible."

Equipment needs: 5 mats, frisbees, ropes, and two scooters.

The Line Game

Goal: The purpose of this game is to get as many different people working together as a team to reach a common goal.

Number of players: Minimum of 5, up to 20-30, possibly more.

Ages: All ages, ability levels and degrees of disability

How played: The object is to have the people playing interact with each other in ways not normally done. For example, the instructor may say for the group or class playing to form a perfectly straight line from the shortest to tallest person. The only thing is that the players aren't allowed to talk to each other. This should be fairly easy to do since they have vision and should perhaps be where you start out the beginners.

Another example would be to line up according to age, month or year born, or by color of eyes or length of hair. Some of these would be considerably harder because you can't visually see when a person was born as you can see how tall they are. The players would have to resort to hand gestures or some other means to figure out what order to line up in.

To make it even more difficult, each player could be blindfolded. Now they can't talk or see. What they can do though is feel. To line up according to height they could feel how tall each person is and line up that way. Maybe having one player act as a leader and everyone goes to him for directions. This game will make everyone work and think more than they usually do and will allow the students to experience what it would be like to have a certain disability.

Equipment needs: Blindfolds.

The Snake

Goal: To develop team building skill, to reinforce concepts learned in the regular classroom such as letters, numbers, and shapes.

Procedures: In a gym place a tug-of-war rope in the middle of the gym coiled up. The group either is given a list of shapes, numbers, or letters by the teacher, or the group may negotiate with the teacher to build other objects. The task is for the group to make the letter, number, or shape with the tug-of-war rope and then to cover the rope completely with their bodies. The task is done when the group members form the designated letter, number, or shape and have it approved by the teacher. Once the first letter, number, or shape is completed the group goes to their next one until they have completed all their assigned letters, numbers, or shapes.

Rules:

1. Make the shape using a tug-of-war rope.
2. All group members must be on or over a part of the rope.
3. The tug-of-war rope must be completely covered by the group members.
4. The group must have each shape approved by the teacher before beginning the next shape.
5. No last names or put-downs.

Equipment: One tug-or-war rope per group

Inclusion: Identifying Student Needs

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Outline

1. Introduction
   The 1990s are recognized as a time when America must give renewed attention to education. AMERICA 2000: An education strategy states that there will be "change in our 110,000 public and private schools, change in our attitude about learning." U.S. Department of Education, 1991. p. 5. Thus, physical education is a vital part of the education process that is guided in Illinois by the Illinois School Code (1996).

   (a) Pupils enrolled in public schools and state universities engaged in preparing teachers shall, as soon as practicable, be required to engage daily, during the school day, in courses of physical education for such periods as are compatible with the optimum growth, and development needs of individuals at the various age levels . . . pp. 310-311.

   The issue that needs to be identified is one that all populations of children, regardless of abilities, be included in physical education classes. A mandate by federal law that is written in the Federal Register, August 23, 1977, which is PL 94-142 states the following:

   (2) "Physical education" is defined as following:
   (i) The term means the development of (a) Physical and motor fitness; (b) Fundamental motor skills and patterns; and (c) Skills in aquatics, dance, and individual and group games and sports (including intramural and lifetime sports).
   (ii) The term includes special physical education, adapted physical education, movement education, motor education. (20 U.S.C. 140 [16] (Federal Register, August 23, 1977, p. 42480).

   The Federal Register goes on to state: 121 a. 307 Physical Education.
   (a) General Physical Education services, specifically designed, if necessary, must be available to every handicapped child receiving a free appropriate public education p. 42489.

2. Inclusion is defined as the act of including or state of being included. (Random House Dictionary of the English Language, 1987). "Inclusion" is an old concept which has recently undergone new meaning as school districts place children with disabilities into regular physical education settings.

3. Identify those students with disabilities.

4. Disabilities we can find in today's classrooms. We are faced with many types of disabilities in our classrooms. Let's examine some of those found within our school systems today.

Adapted Physical Education: As a diversity program of developmental activities, games, sports and rhythms suited to the interests, capacities and limitations of the student, who may or may not participate in a general physical education program. (Arnheim & Sinclair, 1985. p. 2).

Adapted Physical Education Specialist: A person with the same qualifications as the physical education specialist with additional course preparation and practice in the areas of human growth and development and the neurological basis for normal and abnormal motor function. (Sherrill, 1986. p. 56).

Attention Deficit Disorder: Six of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with development level: First, often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities. Second, often has difficulty sustaining attention in tasks or play activities. Third, often does not seem to listen when spoke to directly. Fourth, often does not follow through on instructions and fails to finish schoolwork, chores, or directions in the wordplay (not due to oppositional behavior or failure to understand instructions). Fifth, often has difficulty organizing tasks and activities. Sixth, often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework). Seventh, often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools). Eighth, is often easily distracted by extraneous stimuli. Ninth, is often forgetful in daily activities. (Diagnostic and Statistical Manual of Mental Disorders, 1994. p. 83).

Mild Mental Retardation (EM): IQ level 50-55 to approximately 70. (Diagnostic and Statistical Manual of Mental Disorders, 1994. p. 46).

Hearing Impairment: The child's residual hearing is not sufficient to enable him or her to understand the spoken word and to develop language, thus causing extreme deprivation in learning and communication. Or the child exhibits a hearing loss which prevents full awareness of environmental sounds and spoken language, limiting normal language acquisition and learning achievement. (Title 23: Education and Cultural Resources, 1992, p.I.S. 226.552).

Learning Disorders (LD): Are diagnosed when the individual's achievement on individually administered, standardized test in reading, mathematics, or written expression is substantially below that expected for age, schooling, and level of intelligence. (Diagnostic and Statistical Manual of Mental Disorders, 1994. p. 46).

Multibandicapped: Means concomitant impairments (such as mentally retarded-blind, mentally retarded orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children. (34 Code of Federal Regulations part 300, 1991. P. 34.300-5).

Moderate Mental Retardation (TMH): IQ level 35-40 to 50-55. (Diagnostic and Statistical Manual of Mental Disorders, 1994. p. 46).

Visual Impairment: The child's visual impairment is such that the child cannot develop his or her educational potential without special services and materials. (Title 23: Education and Cultural Resources. 1992. p.I.S. 226.552).

Overview of the Role of Aquatics for Persons with Different Abilities

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The role of aquatics for persons with different abilities is very special because activities in the water give unique advantages to persons with various types of abilities. As will be seen, objectives for aquatic programs are the same as all programs, to learn to be safe in the water and to learn to swim. The difference is that there are various teaching techniques used which can better assist us to attain the goals.

This presentation will focus on philosophy, objectives, course planning, course content, safety concerns, role of parents, individualizing, teaching techniques and equipment needed to conduct a successful aquatic program,

Philosophy: Positive values of swimming for learners include physiological, sociological and psychological. However, the buoyancy of the water and sensory stimulation give additional support , which is especially advantageous to people with certain disabilities. All people need to learn to swim, the only difference in the adapted program is the approach and specific adaptations used.

Objectives: Learning to swim and being safe on and around the water are the basic objectives of the adapted aquatic program. Although there is therapeutic value, the program is not water therapy. Concomitant results include all components of physical fitness, social interaction and psychological sense of well being and belonging.

Course planning: Some factors essential to the program are issues of facilities such as: accessibility, water temperature, parking distance from pool, pool equipment, lifts, etc. Other factors are teachers' credentials, experience and motivation, use of lifeguards, transportation to pool as well as medical information of learners.

Course content: Factors which will affect what is being taught with regard to the learners are: age, experience, skill level, interest, motivation, mental abilities and physical abilities. Length of course determines how much can be covered. Teacher/ learner ratio is also critical to success and safety of the program. Ideally, it is one on one.

Safety concerns: Unique to the adapted program are teacher/learner ratio, number of people with seizure condition, emergency rescues and evacuation procedures, use of lifts both manual and with equipment, possible incontinence of the learner, prevention of blood in water, and safety around and in the pool.

Individualizing: Important to an individualized program are medical and background information of the learner, assessing, planning an IEP (Individualized Educational Program), determining learner positive reinforcement, matching teacher to learner, evaluating learner progress and accomplishments and presenting awards.

Teaching techniques: Determination of appropriate methods for each learner will be done by ascertaining the learner's mental and physical abilities. Those will include: neurological, such as cerebral palsy spinal cord injuries or stroke; learning abilities such as developmental delays and learning disabilities; physical such as spina bifida, multiple sclerosis, orthopedic impairments; sensory impairments such as hard of hearing or visually impaired; and serious emotional disorders, attention deficit disorder, hyperactivity or autism. Once the special needs of the learner have been determined the teacher needs to adjust the techniques, level and speed of teaching accordingly.

Presentation summary: Based upon the needs and concerns of the conference participants, these aquatic program factors will be addressed.

Wheelchair Dance

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Wheelchair Dance is a relatively new sport for disabled persons who are sitting in a wheelchair—permanently or temporarily. Currently Wheelchair Dance is practised in more than 40 countries at different levels:

- in rehabilitation
- as recreational activity
- as competitive sport (18 countries)

The Wheelchair Dance Sub-Committee of the International Sports Organisation for the Disabled (founded 1991 in München/Germany) published an open definition of what Wheelchair Dancing could be on an international level: "Wheelchair Dancing is a Dance where a wheelchair user participates. This includes Ballroom, Formation, Set and Creative Dancing for singles, pairs and groups."

This paper intends to give an impression of Wheelchair Dancing itself, the different forms, the various types and sport sections and to inform about the international organization of Wheelchair Dance as sport.

Forms
Over the last 27 years different forms of Wheelchair Dance were developed:

- **Single Dancing**
  The wheelchair user moves alone - independent of any partner, to music, with rhythmic forward and backward rolling, turns of different speeds and head, arm, shoulder and upper body actions.
- **Couple Dancing**
  It can be practised in two different forms:
  - **Duo Dancing**
    Two wheelchair users are dancing together. They both interact, with or without hand contact, in harmony with music. It started as a recreational activity in Great Britain in 1968 and later on took place especially in the Netherlands and Belgium.
  - **Combi Dancing**
    A wheelchair user is dancing with a non-disabled partner. The rhythmical rolling of the wheelchair user and the steps of the partner have to be adapted to each other to get harmonic dancing performance of the couple. At the end of the sixties it started in Sweden and Germany and from the middle of the seventies it was established in a lot of other countries.
- **Group Dancing**
  Wheelchair users are dancing alone or together with non-disabled partners in fixed formations or free performances, for example in folk dances, in ballroom formations or in freestyle performances to special themes (movement theatre).

Types
Depending on the disability and on the level of training, different types of wheelchair dancing are available:

- **Basic Movements**
  Usually dancing in a wheelchair begins with basic movements stationary or in locomotion. The first aim is to get the fundamental experience of the body and the movements - adapted to the disability. The basis for the dancers are loosening up and generating-flexibility exercises of shoulders, arms, hands, head and upper body (as far as possible) mainly to music, further on exercises of rhythmical rolling for single dancing and for dancing in pairs or groups. These exercises train the sitting position, the coordination, the wheel control, the orientation in space and the cooperation with other dancers. Which kind of dancing is be preferred depends on the interest of the dancers and the knowledge of the teachers.

- **Communicative and Creative Dancing**
  The aim is to initiate communication and cooperation. The ability to act can be reached through

communicative games and different themes which support the dancers in their originality, flexibility and spontaneity. Interaction forms like facial expression, gestures and postures are preconditions for non-verbal communication. Improvisations without and with objects can gather body experience. They can be extended to motion studies with special themes, sometimes to "movement theatre" (like performances of the Munich Wheelchair Dance Group with themes "The Wheel," "Carnival of Harlequins," "Firework").

- **Disco Dancing**
  For wheelchair users, as for persons who are not disabled, Disco Dancing is a domaine of recreational activities. In the relaxed atmosphere of a discotheque dancers can get body awareness more than in any other dance situation. There are all kinds of interaction possible, mostly in "action - reaction games" in which partners creatively react to impulses they give to each other. It is the most popular form of dancing due to the musical animation and the free interpretation of the music.

- **Folk Dancing**
  Easy, traditional folk dances from different countries adapted to wheelchair requirements show the wide variety of Wheelchair Dancing, from basic steps and figures to complex series of steps and figures in space. Folk dances in lines, circles or squares are easy to perform and promote group behaviour and communication.

- **Ballroom Dancing**
  Most social events concern Standard Dances (Waltz, Tango, Viennese Waltz, Slowfox, Quickstep), Latin Dances (Samba, Cha-Cha-Cha, Rumba, Paso Doble, Jive) and other dances (e.g., Rock 'n' Roll, Blues, Mambo/ Salsa, Disco Fox). Young people and adults prefer this type of dancing because there are clearly defined steps and figures. The specific character of each dance must be expressed in partner harmony, in rhythm and timing.

- **Wheelchair Dance Sport**
  For competition style, similar to the dancing sport for non-disabled, Wheelchair Dance sport was established. In 1977 the first competition in Wheelchair Dancing took place in Sweden. Since 1978 the most traditional dance contest—Oslo Open—has been held in Norway. Other international competitions followed. Standard and Latin Dancing is a real sport with all relevant criteria (e.g., maximum utilisation of body movements, coordinative and conditional achievement, competition training normally three till five times per week). International rules, judging criteria (based on International Sport Dance Competitions) and classification criteria, established in 1993 by the ISOD Wheelchair Dance Sub-Committee, are the basis for all international competitions.

International Sports Organisation

Wheelchair Dancing started independently in different European countries at different times with slightly different intentions.

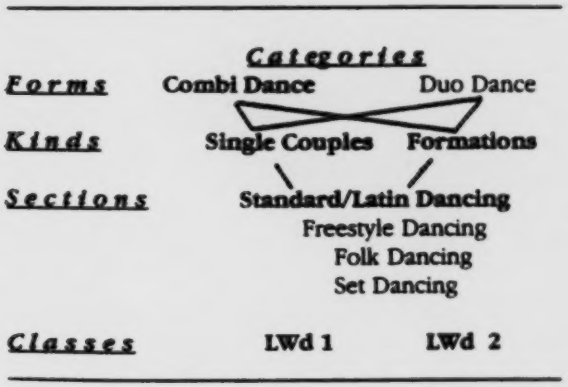
It was myself who organised an international conference for the first time. Thirteen European countries came together in München/Germany in January 1989. This was the first step to international coordination of activities, to cooperation in organizing competitions and championships and to recognition of Wheelchair Dancing as an international sport.

Official recognition of Wheelchair Dancing by the International Sports Organization for the Disabled (ISOD) in June 1989 was followed by the first official European Championships on 19th January 1991 in München/Germany (informal European Championships took place in 1985 in the Netherlands and in 1987 in Belgium).

At the second international conference of Wheelchair Dancing (January 1991) the "ISOD Wheelchair Dance Sub-Committee" was founded to promote wheelchair dance around the world by means of recreational and competitive activities. The International Paralympic Committee/European Region recognized Wheelchair Dancing as a sport in September 1993 and the European Championships were organised in 1993 in Oslo/Norway and in 1995 in Duisburg/ Germany.

In November 1995 the IPC Executive Committee has accepted Wheelchair Dance as an "Affiliated Sport" worldwide. The first World Championships are planned in Japan in 1998.

For international competitions the following categories are valid:



Official International Competitions and Regional Championships are restricted only to **Combi Dance** in the section **Standard/Latin** for **Couples** and **Formations** as in the able-bodied Dance Sport (which consists of an International Dance Sport Federation with 65 national associations) in two classes (functional classification LWd 1 and LWd 2).

Since 1977 a lot of International Sport Dance Competitions have been held, e.g.,

- **European Championships**
  1985 The Netherlands
  1987 Belgium
  1991 Germany (recognised by ISOD first time)
  1993 Norway (recognised by IPC/ EU first time)
  1995 Germany (recognised by IPC/ EU, in November)

- **National Championships** (since 1990, most "Open" for all nations), e.g.,
  Belgium, Estonia, Finland, Germany, Japan, The Netherlands, Norway, Romania, Sweden

- **International Invitation Competitions**, e.g.,
  Oslo Open
  Flemish Open
  Super Japan Cup
  Open European Cup/The Netherlands
  Competitions in Great Britain, Israel, Poland

In the future the main work of the IPC Wheelchair Dance Committee—more than in the former years—is to

- make contacts with existing national sport organizations for the disabled to include Wheelchair Dance in their schedule,
- improve dancers by means of suitable training and information exchange,
- promote Wheelchair Dance through displays, social gatherings and publications,
- train and advance instructors, teachers, coaches and judges.

Conclusion

Experiences over a lot of years in different countries all over the world gave disabled people in wheelchairs a new perspective and opened up new areas of life. Through the communication and intergration of dancing—better than in any other sport—it is possible to overcome prejudices and break down inhibitions. In this way recreational and competitive dancing can be a small step towards the integration of disabled and non-disabled people.

Achieving the "Ultra-*Stretch*"—A Method for Increasing Flexibility and Fitness for *Everyone*

Christine Stopka, University of Florida, Gainesville, Florida

Much of the pain and inflexibility associated with injuries and disabilitities can be minimized through proper stretching. Regaining flexibility is a key goal for rehabilitation programs. Regaining strength and endurance are also important goals. Finding safe and effective exercises to accomplish these goals is paramount if improvements are to be expected. Finding exercises that can be individualized to anyone's needs and abilities is truly welcomed. If these exercises do not require expensive equipment and can be done anywhere, anytime, the chances of their actually being used by people increases dramatically. Finally, if these exercises are extremely simple to do and can be done very quickly, they may be considered to be at least inviting, if not truly miraculous.

It seems possible that the "Ultra-*Stretch*" exercise technique (Stopka, 1996; Stopka & Follenius, 1995) may well meet these criteria. **Indeed, the Ultra-*Stretch* method is specifically designed to be safe, effective, individualized, equipment free, and painless. ANYONE can use this technique.** Elite athletes, children, senior citizens, and certainly, especially, people with disabilities, all, can realize tremendous benefits from these exercises. As the name suggests, the "ultra-*stretch*" technique emphasizes an increase in flexibility; however, muscular strength and endurance can also be enhanced by performing the technique over time (i.e., several times a day, per week).

How it is done

1. Basically, you should carefully, gently, place the muscles you are trying to stretch in a comfortably stretched position.
2. Then, while in this stretched position, you should isometrically contract those muscles. So, without moving from the position of a gentle stretch, you contract the muscles being stretched. Hold this contraction for about eight seconds.
3. Next, without moving at all, relax. Yes, keep the same position, simply cease contracting.
4. Now carefully, see how much farther you can stretch. Presto! What a difference!
5. You may repeat this technique (steps 2 through 4) several times and expect to continue to find increased range of motion each time.

This technique is very useful for countless injuries and conditions. It can be used on virtually any joint of the body. Chronically arthritic finger joints instantly respond with new degrees of motion. Post-surgical joints respond likewise. Individuals with tight muscles, even contractures, associated with cerebral palsy, traumatic brain injury, strokes, multiple sclerosis and debilitating arthritis find the technique to be most helpful. They are often "liberated" on to the next level of accomplishing desired tasks of daily living such as standing, walking, reaching, grasping, and more. Elite athletes, able-bodied (AB) or not, find the technique to be most efficient in achieving desired levels of flexibility and most useful in preventing and rehabilitating musculoskeletal injuries.

How it works

The "ultra-*stretch*" is a name given to the neuromuscular reflex sometimes referred to as the "inverse myotatic stretch reflex" or the "stress reflex" (Stopka, 1996; Stopka & Follenius, 1995). These reflexes are used by rehabilitation professionals incorporating techniques of proprioceptive neuromuscular facilitation, or PNF.

Basically, PNF means that certain proprioceptors in the body are stimulated to facilitate a desired neuromuscular response. So, for example, if an increased contraction was desired, proprioceptors called muscle spindles could be stimulated. They can be

stimulated by suddenly and unexpectedly stretching a muscle. When they are stimulated, they cause the muscle to respond by contracting. (This is why ballistic, or "bounce" stretching is inappropriate; it is not only injurious, but the bouncing causes the suddenly stretched muscles to respond by contracting! Certainly a shortened muscle is not a relaxed muscle.) But therapists do often use this "myotatic stretch reflex," or "stretch reflex" to help facilitate contractions with patients, say due to strokes or other disabilities, who could not otherwise contract their muscles. This reflex is also used to facilitate the attainment of "power" by elite athletes desiring to enhance the contraction force and decrease the contraction time of their muscles. Plyometric training is based on this PNF technique.

But the "ultra-*stretch*" technique does not directly facilitate contractions or power. It is designed to facilitate range of motion (i.e., flexibility). Thus, the "ultra-*stretch*" technique employs different proprioceptors; it stimulates proprioceptors called golgi tendon organs, or GTOs. GTOs are designed to detect changes in muscle tension, especially fatigue. They respond to a fatiguing stimulation by causing a relaxation of the muscle in which they are located. A voluntary, isometric contraction, occurring for 8-10 seconds would cause fatigue to a muscle which is simultaneously being held in an already stretched position. This fatigue, or changing of muscle tension, would cause the GTOs to be stimulated. When they are stimulated they send a message to the spinal cord and it returns with a message to relax. So, the GTOs are proprioceptors designed to protect the muscle from changes in tension; they protect the muscle by causing it to relax. Muscle relaxation is exactly what we're trying to obtain in order to achieve a safe and effective stretch. The stimulation of the GTOs is the secret to achieving the "Ultra-*Stretch*."

So, if you stretch, hold, and then contract a muscle for several seconds, when you cease your contraction, you will find that the muscle will automatically relax and thus be able to stretch farther than it did before! As an added bonus, due to the time you spend contracting the muscle to fatigue it, the muscle is undergoing a bit of a training effect for strength and endurance, as well. So, flexibility can be greatly enhanced, and, at the same time, strength and endurance are also addressed, although to lesser degrees.

Applications

Virtually anyone can gain flexibility with this technique. The only requirement is that there is at least some neuromuscular connection present. So, individuals with complete paralyses would have to rely on conventional passive stretching; only their unaffected muscles would benefit. But individuals with even partial neuromuscular control can benefit. People with spastic cerebral palsy are ideal candidates for this therapy. Individuals with strokes left with just trace strength and joint movement have benefitted substantially. Severe wrist, hand and finger contractures can be worked out to achieve nearly open handed stretches with enough strength and endurance to independently grasp the handles of an airdyne stationary cycle and hold on for the duration of the workout (where the hand initially had to be forced open and tied down with ace bandages and tape).

Generally, elite athletes, such as wheelchair basketball players, understand the need for proper stretching before practice or competition. Those that don't appreciate its importance don't last very long in the sport. **The "ultra-*stretch*" technique can be applied very easily to their already established stretch positions, as the "ultra-*stretch*" is not a stretch position; it is a technique for any stretch position.**

Summary and Conclusion

Many common injuries can be avoided or at least minimized through proper stretching. When injuries do occur, regaining flexibility is a key goal for the rehabilitation program. So, as a preventative for injuries or as a rehabilitation exercise, the "ultra-*stretch*" technique should be considered. **It is specifically designed to be safe, effective, individualized, equipment free, and painless. ANYONE can use this method.**

Simply assume your normal stretch position, hold it; but instead of stopping there like most people do, actually contract the muscle group for several seconds, while in your stretched position. After eight to ten seconds, cease your contraction and relax. You will find that the muscle group will automatically relax and you will be able to stretch farther than you did before! As an added bonus, due to the time you spend contracting the muscle to fatigue it, the muscle is undergoing a bit of a training effect for strength and endurance, as well.

Virtually anyone can gain flexibility with this technique. The only requirement is that there is at least some neuromuscular connection present. **Again, the "ultra-*stretch*" technique can be applied very easily to established stretch positions, as the "ultra-*stretch*" is not a stretch position; it is a technique for any (and every) stretch position.**

References

Stopka, Christine & Chris Follenius (1995). ***Achieving the Ultra-Stretch.*** Burgess Co., Publishers, Minneapolis, MN, 63pp.

Stopka, Christine (1996). "Managing Common Injuries: The Ultra-*Stretch*—A Method for Increasing Flexibility, Strength, and Endurance." ***Palaestra,*** Fall 1996, 12(4), pp. 40-45.

Traditional Korean Play: Jegi-Chagi for Students with Physical Disabilities

Young-Ae Whang

History

Although the history of Jegi-Chagi could be traced back to the period of the Three Kingdoms (around 5-6th century), no one knows just when or how Jegi-Chagi was started exactly. The ancient literature, the History of Three Kingdoms, says that, "There was a game that had been played only among high class children, which was called Chook-Gug, which means kicking a leather ball. They kicked a big ball that was made from the leather of animals and a feather of a pheasant was attached to it." Bibliographers have thought that Chook-Gug was changed to Jegi-Chagi as the playing of Chook-Gug became prevalent. Eighteenth century literature shows that Jegi-Chagi was prevalent among youngsters regardless of their social status. Along with the passage of time, it has been passed down from generation to generation. Now Jegi-Chagi is one of the most popular play activities among youngsters in Korea. Especially when family members gather together to celebrate a holiday, like New Year's Day, most family members enjoy playing Jegi-Chagi together. Sometimes they compete against each other, family to family, with neighbors, or friends to win the championship among them. Jegi-Chagi has become one of the main forms of traditional play in Korea.

Purpose

- to develop eye-foot coordination
- to enhance balance
- to increase agility
- to improve accuracy in kicking and catching (reaction to a specific stimulus)
- to develop concentration on doing activities
- to improve the strength of muscles of whole body as well as legs

Equipment Needed: Jegi

Jegi is the name of the equipment that was made from a traditional Korean coin which has a hole in the middle and a tassel was attached to it. The coin was wrapped in tissue paper, leather, or plastic sheeting to make its tassel. The tassel functioned to reduce the speed of the falling Jegi from the air so that it enables a player to kick the Jegi more easily. Chagi, the Korean word, means "kicking" in English. Thus, Jegi-Chagi means simply kicking a Jegi.

The Jegi is small enough to be carried in one's pocket and can provide entertainment for one or more people. In ancient times, a Jegi was made mainly from the leather of animals; however, along with industrial development the sources of Jegi have been changed. Nowadays, it can be made by tissue paper or plastic sheeting. Also, before industrial development was achieved, a Jegi had been made by hand. Today, the Jegi is manufactured so we can purchase it in any stores in Korea.

How to Make Jegi

Materials needed: Coin, tissue paper or plastic sheet, rubber band or string which can bind a tassel

- Make circle with the tissue paper or plastic sheet.
- Put the coin in the middle of the tissue paper or plastic sheet.
- Wrap the coin and then bind the rest part of tissue paper or plastic sheet with rubber band on the middle of coin.
- To make a tassel, tear the tissue paper or plastic sheet.

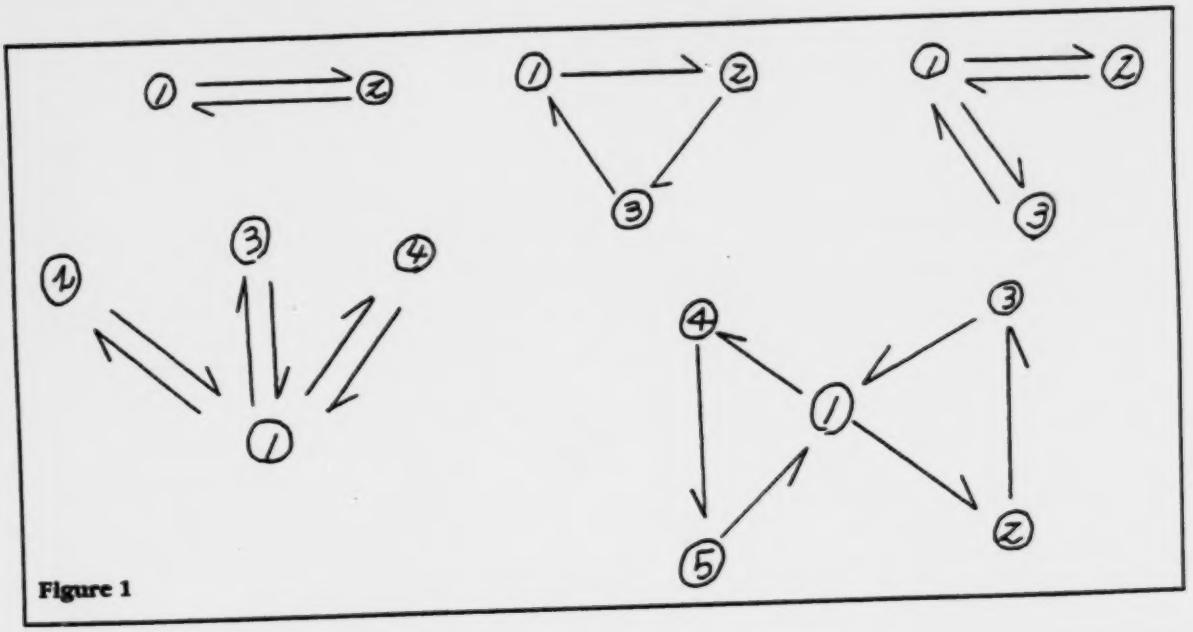


Figure 1

How to Play Jegi-Chagi

Players should wear appropriate shoes, like sneakers, to allow freedom and safety—never bare feet. The object of most Jegi play is simply to keep the Jegi in the air, using the feet (from foot to foot). A kick is used whenever the Jegi drops in front of you—to your right or left. To perform the kick, rotate your ankle and point your toes or move your position to get a comfortable strike. Before the Jegi reaches the ground, players should kick it. If the Jegi reaches the ground, one loses the game. However, before a Jegi reaches the ground, you may catch the Jegi with your hand, so you can begin the game again without penalty. The upper body must not touch the Jegi.

Players may compete in Jegi-Chagi individually or in groups. To win the competition, when playing Jegi-Chagi with two people as an example, count the number of times each player successfully kicks the Jegi without dropping it on the ground. The individual or team obtaining more kicks will be the winner. When playing Jegi with more than two people, you can play Jegi according to the formations illustrated in Figure 1.

Audience Practice with Jegi-Chagi

How to Modify Jegi-Chagi for Persons with Physical Disabilities

- Use whatever forms of support so that the person keeps his/her balance—a crutch, partner, wall, or whatever is comfortable to player.
- Use various sizes of Jegi
- Experiment with several sizes of Jegi until the right size for each person is determined
- Use various colors of Jegi for slight visual problem people
- Use hands for wheelchair users
- Use a racket to play Jegi easier, if wheelchair participants want
- Use his/her thigh to play Jegi easier

Why Choose Horseback Riding?

Natalie Bieber
Steamboat Springs, Colorado

Introduction

Horseback riding provides recreation, therapy, stimulation and competitive opportunities for all persons who take part in this sport. For individuals with disabilities, the above can be especially true. Riding, sometimes viewed as a high risk activity, when undertaken in a controlled risk environment, offers holistic benefits, both psychological and physical. A program can be tailored to meet the needs of riders with specific disabilities, with emphasis on developing physical and/or cognitive skills while enhancing self-esteem. The purpose of this presentation is to provide an overview of horseback riding as a sport and/or therapeutic modality. Though this will be a lecture format, questions and audience participation are very welcomed.

All riding is therapeutic and all riding is recreational. Riding for persons with disabilities is still viewed, however, as more of a therapeutic activity than a purely recreational or competitive endeavor. There should be a very different focus and atmosphere present in programs for adults in contrast to those for children. Professionalism and certification for instructors of riding for persons with disabilities has been established as a norm. Suitable, well-trained horses and volunteers are the backbone of all programs. Saddles, bridles and other tack are chosen and/or modified to meet each horse and rider's unique needs. By the way, this process is no different from that for non-disabled riders.

The individual with a disability can identify with the power and ability of the horse as an extension of him/herself, and as a means to overcome limitations and develop physical abilities. Being on a horse means that the rider is participating in a high status activity which can be risky but rewarding. It is a means of imparting "normalcy" to someone who may feel very different from most other individuals. For a child or an adult who uses a wheelchair, horseback riding provides a unique perspective in that the rider, while in the saddle, looks down rather than up at fellow humans. People with disabilities do not differ to any great extent in their feeling toward riding from those without disabilities. For all, the horse can let them express a variety of feelings which are not evoked with other animals or in other sports, or in other therapy situations.

History

1. The horse as a therapeutic agent first appeared in writings in early Greek and Roman mythology, beginning with Chiron, the Centaur (half man, half horse) known as the first physician and teacher. Medical writers such as Galen in antiquity and others in the last 300 years commented favorably about the benefits of horseback riding.
2. However, though it was commonly acknowledged that "the outside of a horse is good for the inside of a man," it was not until 1952 that modern medical authorities began to acknowledge the value of horseback riding as more than sport. It took the personal efforts of Liz Hartel, for whom riding was a means as well as an end, to demonstrate that recreation, therapy and competition were a healthy, productive outcome. Hartel, a Danish horsewoman, contracted poliomyelitis, which left her a wheelchair user with poor prognosis for walking or riding again. Determined to lead a full life, she returned to riding for recreation and as a means to strengthen her weakened muscles. In 1952 her equestrian skills enabled her to win the silver medal in dressage at the Olympic Games in Helsinki, Finland. Hartel's accomplishment was noted by Scandinavian and British physicians, therapists and horsepeople, and the use of the horse as a novel treatment for other people with disabilities was tried with positive results.

3. In the 1960s and earlier, a growing number of horsepersons in the United States and elsewhere shared their enthusiasm for horseback riding with children and adults who happened to have a disabling condition. NARHA, the North American Riding for the Handicapped Association, was founded in 1969 to enable groups across the country to coordinate efforts and share information. However, there were and still are many non-affiliated programs.
4. Update on present status of programs, etc.

Meaning of a Controlled Risk Environment
1. A medical release and evaluation of needs
2. Trained professional and volunteer personnel
3. Proper equipment for horse and rider
4. Appropriate, well-trained horses
5. Insurance

Special Terminology
1. Therapeutic riding instructor
2. Sidewalkers
3. Backriding
4. Hippotherapy
5. Equine-facilitated therapy
6. Other

Disabilities, Methods, and Potential Outcomes
1. Cerebral palsy
2. Spinal paralysis
3. Gait disorders
4. Developmental disabilities
5. Learning disabilities
6. Attention deficit disorder
7. Behavioral and psychiatric disorders
8. Visual impairment
9. Others

General Positive Effects
- Diminished anxieties
- Development of trust
- Increased self-esteem
- Development of concentration
- Increased tolerance of frustration
- Increased positive social interaction
- Better balance and coordination

Integration into School Programs
1. IEP
2. As an alternative/auxiliary PT or OT session
3. For at-risk students

Competitive Opportunities
1. Special Olympics
2. Paralympic Games
3. Types of events
4. Carriage driving
5. Open competition

Concluding Remarks, Questions, and Discussion

Horseback riding is indeed a high risk activity. The risks involved are currently called to attention every time one sees or hears Christopher Reeve and learns about his accident.

However, controlled risks are necessary for growth, and every person, disabled or not, can do more than he thinks he can. At different levels of ability different challenges can be presented to different riders. For some, the risk is merely getting on the horse; for others, it can be becoming a more independent rider or trying competition. "Risk-taking done within the rider's skill level creates success, excitement and willingness to try new things in all areas of life" (Kittredge, 1996).

Selected References

Baker, L. PT. (1996) "Brain Injuries and Therapeutic Riding." Strides, 2(2), 25-7.

Baker, L. PT. (1996) "Down Syndrome and Therapeutic Riding." Strides, 2(4), 24-6.

Bieber, N. (1996) "Horseback Riding and Individuals with Disabilities: A Historical Perspective." Palaestra, 12(3), 26-31.

Bieber, N. (1983) "The Integration of a Therapeutic Equestrian Program in the Academic Environment of Children with Physical and Multiple Disabilities." New Perspectives on Our Lives with Companion Animals. Philadelphia: University of Pennsylvania Press.

Bieber, N. (1996) "Training for Equestrian Competition." Palaestra, 12(4), 34-8.

Engel, B. PT. (ed.) Therapeutic Riding Programs: Instruction and Rehabilitation. (A Handbook for Instructors and Therapists). Durango: Barbara Engel Therapy Services.

BEST COPY AVAILABLE

Glasow, B. L., RPT. (1982-4) Unpublished articles.
Good, C. (1978). "From Complete Paralysis to Riding Horses." Unpublished.
Jones, B. PhD. (1982). "The Horse and Therapy: History and Psychology of the Horse-Human Bond." Presented at the Conference on People and Horses, May 15, 1982, New Haven.
Kittredge, M. (1996). Letting Riders Take Risks. Strides, 2(1), 32.
Moses, J.H. PhD. "Benefits of Equine-Facilitated Psychotherapy." Strides, (2)4, 13.
NARHA GUIDE. (1996), Denver: North American Riding for the Handicapped Association. P.O. BOX 33150, Denver, CO 80233. 1 (800) 369-7433
Strides. The official publication of the North American Riding for the Handicapped Association. Denver: NAHRA.

Three Decades of Adapting Activities to Maximize Student Skill Development

James F. Cowart
California School for the Blind, Freemont, California

Most students are able to participate within the regular physical education program without any modification. The challenge for the teacher of these pupils is to know what to teach, how to teach, where to teach, etc. For the few students who cannot take advantage of unrestricted participation in physical education, a program adaptation may be necessary for them to be successful. In this case, the challenge for the teacher is to use his/her imagination and creativity to come up with an adaptation that maximizes each student's capabilities.

Over the last 34 years, the session speaker has found the following strategies helpful when challenged by students who cannot participate unrestricted within the activity program.

Student Abilities
An instructor needs to assess the strengths and weaknesses of a student with disabilities before involving him or her in the movement program. This analysis should include information regarding the student's disability or disabilities. Such knowledge can be obtained from the classroom teacher, student health records, parents, physical therapist and/or family physician. With this information, the instructor will have a general idea of what activity adaptations may be needed to accommodate the student.

Present level of functioning and any needed adaptations can be confirmed by having the student demonstrate designated skills. A useful strategy for determining the current level of functioning of a student with a disability in relation to a non-disabled peer is to conduct a Discrepancy Analysis (Brown, Shiraga, York, Zanella and Rogan, 1984). By comparing a child with a disability to a child without a disability, differences can be identified and analyzed, and appropriate adaptations can be made.

Specific Activities
Activities offered in adapted physical education should show little difference from those offered in regular physical education. It is important for instructors to know all aspects of activities (i.e., equipment, rules, skills, etc.). In addition, it is critical for the teacher to have the knowledge and ability to task-analyze skills (i.e., the ability to break a skill down into its component parts for learning purposes). This expertise enables teachers to make necessary modifications to accommodate students while making sure that activities maintain their basic intent or original character.

Age-Appropriate Activities
Program emphasis should be on assisting students to acquire skills functionally appropriate for their age, and activities that encourage interaction with non-disabled peers. If you do not understand what is age-appropriate, look at a few physical education curriculum guides for learners of the same age as your students. As noted earlier, though some students cannot participate unrestricted in activities with their classmates, through activity adaptation it is possible to help them both develop useful skills appropriate for their age and interaction with peers.

With the above information, the instructor is in an excellent position to make specific activity adaptations to accommodate the students. These adaptations can be made in one or more of the following areas: rules of the game, skill(s) taught, instructional strategies emphasized and/or equipment utilized. With the time available, the session will focus on the area of equipment modifications that the speaker has made over the last three decades to successfully accommodate disabled students.

Reference
Brown, L., Shiraga, B., York, J., Zanella, K., and Rogan, P. (1984). The Discrepancy Analysis Technique in Programs for Students with Severe Handicaps Paper, University of Wisconsin-Madison.

Go for the Gold: Common Sense Strategies for Teaching ADHD Children

Michael R. Davey, Western Illinois University

Attention Deficit Syndrome

I. Prevalence
   A. 3% to 5% of all grade school children
   B. Mostly boys
      1. 13%-15% of 3 year olds
      2. 20%-50% of problems carry over into elementary

II. Symptoms
   A. Short attention span (100%)
   B. Hyperactivity (70%-80%)
   C. Impulsiveness: Erratic and/or out of control behavior (60% plus)
   D. Learning disabilities (30%)

III. Outcomes
   A. Core symptoms abate in 50%
   B. Adolescents
      1. Poor self-concept
      2. Poor school performance
      3. Poor peer relationships
      4. Substance abuse????
   C. Find outlets for success
   D. Find jobs that allow for movement

Instructional Methods for ADHD Children

1. ADHD children typically learn better with a hands-on type of approach rather than through class lecture alone.
2. Try not to take away recess as a punishment for misbehavior. The ADHD children need time to discharge pent-up energy and socialize with other children.
3. For ADHD children with severe disability, surrounding environmental stimulation will have to be controlled. Create an "office" for the ADHD child using the sides of a large shipping carton, so that he or she has a quiet place to work with fewer distractions. Never use this area as a punishment but rather as a special place for the child to get his or her work done.
4. Try to schedule some active time into the daily classroom routine.
5. Help the ADHD child organize his or her environment (e.g., use boxes and cardboard dividers to help organize the child's desk; organize subjects and assignments with color-coded folders). The ADHD child may also need more help in learning to use and maintain an organizational system.
6. Provide frequent structured breaks (e.g., 5 minutes of stretching, coloring, songs, etc.).
7. Establish a regular routine in the classroom. Begin the day with the same routine or task. Also, begin new tasks with some readiness signal (e.g., stand up and touch your toes, close your eyes, and settle down and begin working).
8. Try to use instructional periods. For example, instead of working on math problems for 30 minutes, break the task into three 10 minute periods or two 15 minute periods.
9. Teach the child how to review his or her assignments to check for errors.
10. Achievement testing may need to be administered either individually or in a resource classroom.
11. The ADHD child will require increased external structure in the classroom, particularly when confronted with tasks that involve working independently. You may need to help direct and focus the child's attention at the beginning of a task, and you may need to help monitor attention throughout the task.

12. Instructions should be kept very short and simple. It may be helpful to have the child repeat instructions aloud before a new task is begun. This should be done as inconspicuously as possible to avoid embarrassing the child.
13. ADHD children can be taught a "stop, think, say, do" strategy to control impulsivity. In this approach, children are taught to stop before acting; think about what they are going to do; say aloud what they are going to do; and then do what they have said.
14. Teach children to "talk" themselves through rote tasks, such as solving math problems or writing letters.
15. In educational programming, it would be generally best to avoid excessive time pressure and highly competitive classroom situations, as this will make it even more difficult for ADHD children to control themselves.
16. ADHD children's behavior tends to worsen with repetitive, routine activities. The more novelty one can introduce into the learning situation, the better will be their attention. Also, perhaps more emphasis could be placed on the quality and accuracy of the children's work rather than on the amount of work completed.
17. ADHD children may benefit from a concrete tracking system to monitor their completion of assignments. For example, they could receive a star or a poker chip for each assignment completed. After obtaining a certain number of stars, children would be able to trade them in for some small toy or privilege. Don't expect perfect performance.
18. Let the child give you some input on both positive and negative reinforcers.
19. "Catch" children behaving appropriately or paying attention and praise them.
20. Clearly identify appropriate and inappropriate behaviors.
21. Clearly communicate expectations and consequences for desirable and undesirable behaviors.
22. Apply behavioral consequences swiftly and consistently.
23. Change positive reinforcers often so that they maintain their effectiveness.
24. Use a time-out corner or area for inappropriate behavior. Try to make this place as unstimulating as possible and make termination for time out contingent on good behavior rather than on a certain amount of time.
25. Teachers need a lot of support in dealing with ADHD children. If you get stuck or overwhelmed call in another professional for a consultation (e.g., another teacher, school psychologist, principal).

Recommendations for giving instructions to students

1. Maintain eye contact with the ADD students during verbal instructions.
2. Make directions clear and concise. Be consistent with daily instructions.
3. Simplify complex directions. Avoid multiple commands.
4. Make sure the ADD student comprehends before beginning the task.
5. Repeat in a calm, positive manner, if needed.
6. Help the ADD child to feel comfortable with seeking assistance (most ADD children won't ask).
7. These children need more help for a longer period of time than the average child.
8. Require a daily assignment notebook if necessary.
   A. Make sure the student correctly writes down all assignments each day. If the student is not capable of this then the teacher should help the student.
   B. Parents and teachers sign notebook daily to signify completion of homework assignments.
   C. Parents and teachers may use notebook for daily communication with each other.

Let's Work Together: Team Building Pool Games

Phillip Conatser, University of Virginia

Are you interested in learning some new games that will promote inclusion and apply to all types of group dynamics. Then come on, "Let's Not Only Work Together," Let's "Have Fun Together."

Note: Handouts will be given at session.

Location: Pool

Title: Is active range of motion increased by performing assisted full range of motion leg flexion exercises (leg curls) through a spastic (biceps femoris, semimembranosus, semitendinosus) hamstring muscles. Let me share my exciting results with you!!!

Description: This study was to determine improvement in leg flexion at the knee in spastic hamstring muscles. All students that participated were quadriplegic boys ages 8-16. The students were instructed to only do exercises during training time. Warm up consists of stretching the hamstring, 3 sets, with each set lasting 10 seconds. During leg curls no weight, other than gravity was used, 3 sets of 18 reps, 4 times a week for 6 weeks. The instructor helped the students continue the movement to the point of resistance. Students are tested for AROM/PROM while laying on their side. Measurements are taken at the axis of the knee, alignment for goniometer is from the greater trochanter of femur and lateral malleolus. At the end of the six weeks the students did improve in their ability to do leg curls. Also it was observed that the students' ability to use their legs in a functional manner seemed to improve as well. Come and join me as I walk you through this workout technique.

The Fitness Clinic for Physically Disabled at San Diego State University: A Model for the Future

Peter M. Aufsesser
San Diego State University

Purpose

The Fitness Clinic for Physically Disabled was established in 1983 through the support of a grant from the Office of Special Education and Rehabilitation Services. The Fitness Clinic was started to meet two basic objectives. First it provides a training site for our students entering professions in both the education and medical fields. There were no sites available in the community where students in adapted physical education, pre-physical therapy and sports medicine could obtain hands-on experience working with individuals with physical and neuromuscular disabilities in a clinical setting. The second objective was to provide a service to individuals in the community with a wide variety of physical disabilities, who otherwise would have no program available to them. Currently, 14 years after our inception, both objectives are still germane and, in fact, the need in both cases has increased.

The need to provide training to students entering the "helping professions" has indeed increased. The demand for personnel to work with individuals with both physical and severe disabilities has increased. In California there is a shortage of adapted physical education teachers in the schools, as well as a shortage of physical therapists available to work in a variety of different settings with individuals with disabilities. Our health care system now keeps many individuals alive who previously died. Thus, we have not only older individuals with disabilities but non-disabled individuals with chronic problems. The need for regular physical activity by all of these groups to maintain their independence in their activities of daily living has increased tremendously. This increase in need drives the demand for trained personnel in both the educational and medical settings.

The Fitness Clinic for Physically Disabled strives to continue to operate a quality, state of the art program to provide students with quality training, working with a wide variety of individuals with disabilities. In addition we continue to provide individuals with disabilities a quality exercise program. In the 1996-97 year the Fitness Clinic will provide 126 students the opportunity to put their knowledge to work and hone their clinical skills in the Fitness Clinic, while 80 individuals, age 12-87, with a variety of disabling conditions, will receive an individualized and safe exercise program to help them maintain their fitness and independence. This includes individuals with strokes, acquired brain injury, spinal cord injuries, cerebral palsy, multiple sclerosis, muscular dystrophy, and other conditions. The attached chart provides a summary of the clients we serve through the Fitness Clinic Program. The Fitness Clinic is recognized as a pioneer not only in San Diego, but its reputation exists across the state and the nation. The program is vendorized by the Califomia Department of Rehabilitation and San Diego Regional Center. These two state agencies will pay the fees of their clients who qualify for the program. In addition there have been two articles in national professional publications on the Fitness Clinic Program.

The Staff

The Fitness Clinic was founded by Dr. Pete Aufsesser who is the clinic director. Dr. Aufsesser has a doctorate in adapted physical education from the University of Maryland and extensive experience in organizing and operating exercise programs for individuals with all types of disabilities. The day to day operation of the clinic is under the direction of Mr. James P. Burke, the clinic's program director. Mr. Burke, in

addition to having received a master's degree in adapted physical education, is a registered kiniesotherapist (KT). Mr. Burke has extensive experience working and directing fitness programs for individuals with physical disabilities. He has been the Program Director since 1989. In addition to these two faculty members, the Fitness Clinic hires student assistants to work in the program. Currently our lead student assistant is Ms. Jill Morris, a student in the "Specialist Credential" in adapted physical education. Ms. Morris's position is funded from the Frank Parodi Work-Study Fund. Additional paid student assistants work in each of the Fitness Clinic's 7 sections. Finally, but certainly of critical importance to the program, are the 120 plus students enrolled in the Adapted Physical Education Lab each year who assist the clients with their individual exercise programs. Without the quality work these students perform, the Fitness Clinic could not operate.

The Program

The Fitness Clinic provides an individualized exercise program based on a medical screening and motor assessment for each individual. Goals are developed and a program is implemented. Each client is assigned a student assistant who helps them as needed to complete their exercise regime safely and correctly. The student assistants are students in the Adapted Physical Education Laboratory Class. They are seeking careers in physical therapy, adapted physical education, athletic training, physician assistant, exercise leadership, and other health related professions. The students have taken or are currently enrolled in a class in Corrective Physical Education and undergo a 9 hour orientation prior to working in the Fitness Clinic.

Clinic Funding

The Fitness Clinic is a self-supported program which operates on client fees, grants & contracts, and donations from individuals in the community. The Clinic was started in 1983 with the assistance of an Office of Education Training Grant (Project MAPED). That grant ended in 1986 and the Clinic has been self sufficient since. In 1988 Dr. Aufsesser commenced an endowment fund seeking to ensure the Fitness Clinic's long-term existence. In 1990 a second endowment fund was established in honor of Frank Parodi, a client who was terminal with Lou Gehrig's Disease (Amyiotrophic Lateral Sclerosis). This fund supports a student assistant in the Fitness Clinic through a work-study program. Currently the funds have $85,000 and $10,000 in them respectively. The goal is to accumulate enough funds in the endowment to generate enough interest to supplement client fees, etc., to operate the program. In addition an endowment fund can allow us to provide a lower fee schedule for clients with financial need. Thus, no one is precluded from entering the program due to lack of funds. Currently 25% of the clients pay only a portion of the clinic's fees.

The Future

The Fitness Clinic, commencing its 14th year, is financially stable and on the verge of expansion. Plans are in place to expand the current physical space in the clinic. This will allow us to do a number of things. First, we can serve more individuals with disabilities in the community who are in need of regular exercise programs. Secondly, it will provide more clients for our students to work with. This, in turn, will mandate hiring more paid student assistants, thus providing paid experience for students who have done well in their class experience. Finally, we will be able to purchase more equipment which in turn will improve the quality of what we have to offer. We believe that programs like ours are the wave of the future. The need for these programs continues to increase. We recently entered into an agreement with a local school district to provide fitness classes to their transition students. In addition to the fitness activities, we can assist in developing the motor skills needed for the job they are in training to learn. The future looks bright, and we look forward to continuing to train students and serve individuals with disabilities.

Information

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Active Participants 1996
Fitness Clinic for Physically Disabled
Data Collection

PARTICIPANT	CONDITION	DOB	AGE	SEX	ONSET
	ABI/multi	7/27/59	37	M	6/85
	SCI	3/25/70	26	F	3/92
	CP/multi	3/6/36	60	F	3/36(DOB)
	CVA/multi	6/11/23	73	F	5/93
	TBI/multi	8/31/11	55	F	12/84
	CVA	11/30/25	71	F	10/91
	CVA/aneurism	11/6/23	73	M	1966
	CVA/multi	6/20/24	72	M	1/95
	ORTHO	10/2/65	30	M	2/92
	CVA	10/5/26	70	M	3/94
	TBI/multi	11/24/54	71	F	10/85
	CVA	2/18/25	71	F	2/95
	CP/dd*	12/1/61	35	F	12/61 (DOB)
	Lupis/asthma/cva	7/12/3 1	65	F	1965
	CVA	12/3/10	86	F	10/94
	TBI/obesity	2/15/15	51	M	11/82
	CVA	1/24/13	83	F	9/93
	CVA/diab/obese	8/1/54	42	F	6/93
	SCI	5/1/50	46	F	1980
	CVA	10/13/14	81	M	9/94
	Geri	5/21/11	85	F	CLINIC: F '95
	CVA	3/24/37	59	F	1986
	CVA/respiratory	3/17/39	57	F	10/93
	MS	12/24/12	51	F	1981
	TBI/multi	8/11/67	29	M	9/88
	NM-MD	7/28/59	37	F	1985
	CVA/tumor	6/29/09	87	F	tumor58/cva 2/93
	Post polio	10/1/51	15	F	1985
	Ortho	6/29/75	20	F	10/95
	TBI	7/12/65	31	F	9/91
	CVA	1/3/28	68	M	3/91
	CP/multi	8/13/58	38	F	8/58 (DOB)
	CVA/Amp	12/14/13	83	F	9/89
	SCI/TBI/multi	5/29/53	43	F	4/94
	Ortho/cardio	9/7/25	75	M	CLINIC: 6/94
	CVA/cobs	6/6/23	73	F	10/88
	CVA	8/14/61	34	F	
	MS/arthritis	12/19/22	74	F	1947
	MN/ALS	6/10/15	81	M	4/91
	MS/multi	6/24/58	38	F	1983
	SCI/TBI	4/4/69	27	M	6/88
	CVA	2/21/21	75	F	12/91
	CP	11/25/77	19	M	11/25/77 (DOB)
	NM/sma	11/19/58	38	M	11/19/58 (DOB)
	SCI/cancer/cardio	11/24/39	57	M	3/87
	SCUtumor	5/11/71	25	F	9/89
	CVA/diabetes/obese	11/15/51	45	F	10/95
	CVA	5/3/29	67	M	5/95
	COBS	10/10/19	77	M	1/88
	DD	12/8/70	26	M	12/8/70 (DOB)
	NM/sma	2/19/61	32	F	2/19/64 (DOB)
	TBI/ortho	7/29/65	30	M	2/94
	TBI	11/27/64	32	F	2/13/87
	NM/sma	10/16/64	32	F	10/16/61 (DOB)
	MS/multi	7/25/48	48	M	I 977

PARTICIPANT	CONDITION	DOB	AGE	SEX	ONSET
	DD	7/17/82	11	M	7/17/82 (DOB)
	TBI/asthma/ortho	9/44	52	M	tbi70/asthma:dob
	CVA	9/11/26	70	M	10/81
	P-polio/cva/cardio	7/20/27	69	M	p/51 cva/79
	TBI/cardio/multi	4/3/16	80	M	tbi44/by-pass-93
	SCI/Cancer			F	
	CVA	7/27/26	70	M	1991
	SCI/Cancer	10/64	32	F	1966
	SCI	2/8/51	45	M	1977
	CP/Cancer	9/30/53	13	M	9/30/50(DOB)
	CVA/multi	2/2/57	39	F	2/92
	SCI/tumor	10/11/20	76	M	1/89
	P-polio/ortho/cardio	3/14/20	76	M	P-45/cardio-72
	CVA	8/3/31	65	M	6/95
	SCI	10/15/53	43	M	3/83
	CP/multi	5/12/45	51	M	5/12/45 (DOB)
	CP	9/17/65	31	M	9/17/65 (DOB)
	MS	12/9/53	13	F	1970
	TBI/multi	11/29/56	40	F	1977
	Geri	2/17/19	77	F	CLINIC: SP-95

Competitive Wheelchair Athletics

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The University of Wisconsin-Whitewater, in response to a growing need for competitive sport opportunities, has developed one of the most comprehensive competitive wheelchair basketball programs in the country. The program addresses all aspects of a student/athlete's participation in competitive athletics. There are three main areas that combine to address all aspects of the competitive athletics program: The Code of Conduct, Administration, and the Wheelchair Sports Model.

The cornerstone of the program is the Code of Conduct that each student/athlete must sign. This code outlines the commitment each individual must make in order to participate in the program. The code addresses such issues as academic compliance, training schedules, community involvement, fundraising, self-respect, respect for others, and drug-free participation in sport. The two issues addressed in the Code of Conduct that are emphasized most in the program are academic compliance and drug-free participation.

The academic performance of the student/athlete is of utmost importance to the program. The student comes first in student/athlete. Every student/athlete in the Wheelchair Athletics and Recreation Program should have the goal of attaining a minimum G.P.A. of 3.0. The student/athletes that do not attain a G.P.A. of a 2.75 or greater are required to attend a study hall session that meets three times per week. Should a student/athlete receive a grade of a D or F, s/he must report to the on-campus tutorial center or show the program coordinator that s/he has arranged for assistance from another source.

Any University of Wisconsin-Whitewater athletics program member that is found to be using unauthorized drugs, stimulants, or other substances with the purpose or intent of performance improvement, or for recreational usage will be disqualified from further participation in the Wheelchair Athletics Program and all rights affiliated with program involvement will be revoked. Any student/athlete attending a training session, game, or other program affiliated event under the influence of alcohol will be immediately dismissed from the team. Readmittance to the program is at the discretion of the program coordinator and the team. This readmittance will be based on the student/athlete's demonstration of commitment to the ideals outlined in the Code of Conduct.

The training schedule for the wheelchair basketball program has been set up around the academic schedules of all the student/athletes involved. Currently the wheelchair basketball players meet five days a week 6:30 a.m.-8:00 a.m. and Sunday evenings for team skills. The student/athletes are then required to come in multiple times a week for weight training, aerobic conditioning, and anaerobic conditioning around their personal schedules. In the event of a conflict with the training schedule, it is the responsibility of the student/athlete to contact the program coordinator or appropriate program assistant.

As a result of limited funding from the university, those associated with the wheelchair athletics program must participate in fundraising activities. All participants are required to participate in fundraising activities in order for the program to afford the expenses of competition. The costs of accommodations, food, and transportation on road trips must be covered, and without fundraising money the program is unable to pay for these services and the student/athletes must pay for them.

The administration of the wheelchair basketball program is handled by the Wheelchair Athletics and Recreation Office. The office handles the scheduling of practices, games, general operation of the program, and recruiting. The staff of the Wheelchair Athletics and Recreation Office work with the wheelchair basketball coach to ensure that the needs

of the team are met. In providing this support, the Wheelchair Athletics and Recreation staff allows the coaching staff to focus its primary attention on sport specific issues.

The scheduling of practices and games is a process that the administration of the program works on for months before a season starts. The practice schedule must be feasible for all student/athletes to attend, hence the 6:30 a.m. practice schedule. The game schedule is filled the spring preceding a season. First, the conference (the Central Intercollegiate Conference) obligations are fulfilled. To fill up the rest of the schedule, the staff calls the top ten teams in the country and attempts to schedule games.

At the University of Wisconsin-Whitewater Wheelchair Athletics and Recreation Program we have developed a successful recruiting process. By working with the commissioner of the youth division of wheelchair basketball to obtain rosters of the junior wheelchair basketball teams across North America, attending junior tournaments, and expanding our recruiting to an international level, we have recruited some of the top players in the world. There is a philosophy behind the recruiting process that we follow when recruiting every student/athlete. Academics is always first. Should a student/athlete benefit more academically by going to another university, we inform him/her of this. If the academic goals of the student/athlete can be best met at the University of Wisconsin-Whitewater, then s/he could start looking at the training and philosophies of the program and the coach. If these also match the goals of the student/athlete, then s/he should consider becoming part of our program. As a rule, the staff at the University of Wisconsin-Whitewater Wheelchair Athletics and Recreation Office focus on recruiting about four individuals per year. The reason for the low number of recruits is simply low resources and staff; in order to recruit more, the program would have to hire a full-time employee to handle the recruiting process.

The last area of importance is the Wheelchair Sports Model. This model defines the goals and objectives for competitive student/athletes in the competitive athletics program. These goals and objectives allow the coaching staff to provide appropriate instruction in wheelchair basketball while ensuring proper development in the physical, psychomotor, cognitive, and affective domains. These four domains each have objectives that are established and criteria for participation. The criteria for participation in one of the components are interest and readiness skills needed to safely participate within that component.

Physical fitness is the degree to which the body can meet the physical demands placed on it. In the past this domain has been limited in the focus placed on it as a result of the perceived lack of ability. Along with this perceived lack of ability has come a lack of imagination in developing ways for individuals to meet their goals and objectives in this area. The first objective in this area is individual attainment of cardiovascular strength. The second objective is to develop muscle strength and endurance. Developing agility, or the ability to control body movements, is the third objective. The fourth objective is to improve flexibility, and the last objective in this domain is to control weight and body composition.

The second domain focused on is psychomotor skills. Psychomotor skills must not be overlooked when establishing goals and objectives. The first objective in this domain is to develop gross motor skills and then one can work on developing fine motor skills. Learning appropriate developmental motor patterns is the third objective in the psychomotor domain, followed by learning sport skills of our culture and others. After learning sport skills, individuals can start learning sports and other activities for lifetime use.

Cognitive skill are very important to develop in order to participate in sports and athletics. Developing an understanding of the health-related components of physical activity and learning the cognitive components of sports all help student/athletes become the best athletes they can be. This means understanding his/her own body, how it moves, and what enhances performance.

The final domain covered by the Wheelchair Sports Model is affective skills. Affective skills are a very important part of being a student/athlete. The areas covered in this domain are good sportsmanship, cooperation and teamwork, appreciation for regular

physical activity, emotional control, leadership and follower skills, recognizing and accepting the strengths and weaknesses in one's self and in others, and developing a positive self-concept.

The four domains of the Wheelchair Sports Model are continuously receiving the attention of the student/athletes in the Wheelchair Athletics and Recreation Program. Goal sheets are filled out at the beginning of the season for long-term goals and every day for short-term goals. These goal sheets cover every domain of the Sport Model and are required to be filled out every day. Goal setting is a very important part of the wheelchair basketball program that helps the student/athletes focus on the specific areas that they feel they need to improve on.

It is only through carefully designed interaction between the Code of Conduct, the administration, and the Wheelchair Sports Model that the University of Wisconsin-Whitewater is able to meet the competitive needs of student/athletes who have a disability.

Appropriate Inclusion in Physical Education: From Perceptions to Practical Pointers

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There are a growing number of physical educators who advocate placing students with disabilities in general physical education (GPE) first and foremost, before alternative placement options are to be considered. To complement this growing advocacy, a body of literature is emerging that lends support to including students with disabilities in general education (Block, 1994; Block & Garcia, 1995; Craft, 1994). Roper (1991) suggested that all students' physical education experiences should occur in GPE classes. He argued that many GPE teachers exhibit stereotypical behaviors toward students with disabilities and that their perceptions (Pygmalion effect) and theoretical orientations ought to be changed. If change is to occur, appropriate attitude-change strategies (Hodge & Jansma, 1997; Kowalski & Rizzo, 1996), specific teaching interventions, adequate support services, and inservice training opportunities should be provided to physical educators (Block, 1994; Murata, Hodge, & Jansma, 1994). More important, such proactive emphases will enhance the competency level of GPE teachers who are critically interwoven into the inclusion process (Kowalski & Rizzo, 1996). Quality inservice training should include, as examples, information provided by individuals with expertise and experiences in programming for students with disabilities, a series of inservice follow-ups, longitudinal evaluations of inservice training effectiveness, collaboration with the home-school Individualized Education Program (IEP) team, and inclusive GPE instructional "best practices" ought to be addressed.

Given the growing advocacy for inclusion within GPE contexts (Block, 1994; Block & Zeman, 1996), an emerging body of literature supportive of the inclusion philosophy (Block & Garcia, 1995; Block & Vogler, 1994; Murata & Hodge, 1997), and a perceived need to provide ideas for physical educators, the purpose of this paper was to highlight strategies and methods that promote successful inclusion of students with disabilities into GPE contexts.

Perceptions of Physical Educators Toward Inclusion

In order for successful inclusion to occur within a GPE context, of paramount importance is the GPE practitioner's perceptions about inclusion, his or her competency level with respect to the implementation of various instructional strategies, and the availability and utilization of trained support personnel. Along these lines, recent studies (Maeda & Murata, 1997; Hodge & Murata, 1997; Murata, et al. 1994) have examined inservice and preservice physical educators' perceptions toward including students with disabilities in GPE classes. More specifically, Murata, et al. (1994) reported that inservice physical educators tend to exhibit ambivalent perceptions toward including students with disabilities in GPE classes, as measured by the original Physical Educators Perceptions on Inclusion Inventory [PEPII] (Hodge, Murata, & Jansma, 1993). In a related study, Maeda and Murata (1997) also used the original PEPII to survey inservice GPE teachers across a school district in Hawaii and reported that these physical educators were ambivalent to comfortable with the concept of inclusion. Caution must be exercised in generalizing these two studies results since neither validity nor reliability was reported on the original PEPII instrument by the authors (Maeda & Murata, 1997; Murata, et al. 1994). More recently, however, the instrument has been revised based upon recommendations offered by a panel of nationally prominent experts in adapted physical education (Hodge & Murata, 1997). To be specific, Hodge & Murata (1997) argue that content validity (item and sampling) has been established with respect to the revised instrument. In addition, evidence of the instrument's reliability is reported based on data gathered from a sampling of 127 preservice physical educators across several states. According to Hodge and Murata (1997), a split-half reliability check adjusted with Spearman-Brown Prophecy Formula coefficient alpha .82 offers evidence that

the instrument has internal consistency (Gay, 1992). In addition, the authors conducted a test-retest procedure utilizing the same subject pool and reported strong confirmational evidence (coefficient alpha .91 on perception probes and .93 knowledge on probes) that the instrument has stability (Gay, 1992). Further, Hodge and Murata (1997) reported that female GPE majors held significantly higher perception scores on inclusion than their male peers. Although perceptual scores differed, both female and male GPE majors tended to exhibit indecisiveness with respect to including students with disabilities into GPE classes. They also reported that GPE majors with experience teaching individuals with disabilities held higher perception scores than respondents with no such experiences.

The importance of promoting favorable attitudes and perceptions toward including students with disabilities in GPE classes is to help ensure that all school personnel (i.e., administrators, support staff, related services) support the inclusion philosophy. Along similar lines, the National Association for Sport and Physical Education (NASPE), a branch of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) offered a position statement relative to inclusion and physical education. In short the position statement noted that "students should not have to earn their way into physical education, students with disabilities and physical educators may need varying amounts of support, evaluations should be on-going, and physical placement alone should be the sole criterion for participating in physical education classes" (Block & Garcia, 1995).

Practical Pointers

The inclusion philosophy is interpreted and often expressed in very unique ways across varied local school agencies (LEA). In this regard, the interpretation of an inclusion philosophy has not, cannot, and should not be a "blanket statement" for all to follow. Across school districts, and even school buildings, a variety of strategies and methodologies need to be employed in order to most appropriately meet the varying needs, interests, and learning abilities of students with disabilities. To this end, the NASPE offered several guidelines for physical education teachers with respect to including students with disabilities in their classes (Block and Garcia, 1995). To be noted is NASPE's suggestion that physical educators should have a positive attitude and exhibit a willingness to accommodate students with disabilities. More specifically, NASPE offered the following perspectives (Block & Garcia, 1995):

- A positive attitude and the willingness to make an effort to accommodate students with disabilities is needed.
- Failure can occur when physical educators do not want the student in their class.
- Learning about students with disabilities is necessary.
- Physical educators should be active members of the student's IEP/IFSP/ITP.
- Physical educators should know the various roles of other team members (physical and occupational therapist, special educator, parent, school psychologist, administrator).
- Physical educators should utilize support persons (e.g., peers and teacher assistants).
- If physical educators think they need extra help or support for a student, then they should ask for it. The more specific the physical educator can be in providing a rationale for this support, the more likely he/she will receive it.
- Physical educators should be prepared to make simple adjustments to their teaching styles.
- Physical educators should vary equipment so students with limited strength and/or coordination can be successful.
- Physical educators should not be afraid to be innovative and try new things.
- Physical educators should use the inclusion of students with disabilities as a learning experience for students without disabilities.

These suggestions are generalizable across all physical education programs. In support of these suggestions, we consider inservice training, support services (e.g., adapted physical educator, peer tutors), and instructional "best practice" strategies critical tools needed to promote favorable attitudes and perceptions toward including students with disabilities in GPE classes and to supplement educators' teaching repertoires that will allow them to enhance the physical education experience for students with and without disabilities.

Inservice Training

Traditionally, inservice training workshops were conducted by school personnel who took on the leadership role of providing needed training within a particular school district and those teachers who attended the inservice workshops usually received inservice workshop credit hours (Melograno & Loovis, 1991). Although such inservice opportunities are noteworthy and important, there typically was no follow-up or debriefing effort made as to the effectiveness of the inservice experience. Once the inservice training workshop was completed, most physical educators were left to "fend" for themselves within their respective settings. Melograno and Loovis (1991) suggested that inservice training should be carried out longitudinally (i.e., over the course of time). Further, they created a three-tiered training system comprised of the following three phases: (a) Phase I included the collection of attitudinal data, acquisition of teachers' profiles, training with respect to the Bruininks-Oseretsky Test of Motor Proficiency (Bruininks, 1978), and participants' issues and concerns were addressed, (b) In Phase II participants were able to select, analyze and interpret assessment data and design appropriate motor programming, and (c) Phase III provided field based interactions with the project directors and participants within their school environments (Melograno & Loovis, 1991). Culminating results indicated a positive shift in attitudes on behalf of the participants who scored low in the beginning as compared to the end of the inservice training scores. In addition, following the training teachers felt more aware of, and therefore better able to comply with P.L. 94-142 (Part B of P.L. 101-476, Individuals with Disabilities Education Act) mandates.

Another method for generating important inservice training data is to employ such tools as the Program Quality Indicators [PQI] (Meyer, Eichinger, & Downing, 1992; Meyer & Eichinger, 1994) checklist. The PQI (Meyer & Eichinger, 1994) is a checklist of promising educational programs for students with severe disabilities. This checklist was designed to allow school personnel, families and consumer groups to assess, evaluate and guide a student's development within the program. By using such a checklist, the physical educator is able to ascertain specific inservice training area needs that would help her or him meet the needs of students with disabilities in GPE.

In support of inservice training, Murata and Hodge (1997) suggested that quality driven training should be offered to support personnel who are likely to work with students with disabilities in GPE. They suggested that knowledge and disability type, behavior management techniques, prompting levels, and roles and responsibilities are important topical areas to be considered when training support staff. Along similar lines, Houston-Wilson, Lieberman, Horton, and Kasser (in press) argued that peer tutors can be used effectively and that the need for inservice training is important. Further, they suggested that disability awareness, reinforcement procedures, and prompting are necessary for peer tutors to work effectively with students who are disabled. Although the importance of inservice training has been highlighted within this paper, Webster (1987) reported that trained and untrained peer tutors' effectiveness was not significantly different based on academic learning time (ALT) variables. Clearly, more research needs to be conducted to examine the effectiveness of providing inservice training across general physical education contexts. However, a reasonable extension of inservice training for physical educators is the training and use of support personnel to assist and support students with disabilities in GPE.

Support Personnel

Including students with disabilities in GPE will unlikely yield successful results without the use of support personnel. In this regard, the use of supplementary aids and services are advocated as assets to a successful inclusive physical education program (Block, 1994; Slock & Krebs, 1992). Supplementary aids and services include, but are not limited to, peer tutoring, teacher assistants, and assistive technologies and materials (Block & Krebs, 1992; Block & Vogler, 1994). In order to address the unique needs of students with disabilities being included in GPE, a continuum of support services and personnel (e.g., peer tutors and teacher assistants) appears necessary (Block, 1994; Block & Krebs, 1992; Block & Vogler, 1994; Craft, 1994; Sherrill, Heikinaro-Johansson, & Slininger, 1994).

Peer Tutors. Chronologically age-appropriate peer tutors can be used as effective resources to facilitate inclusive physical education (Block, Oberweiser, & Bain, 1995; Block & Vogler, 1994; Lieberman, 1996). To this purpose, Block (1995) provided practical recommendations on training methods and the appropriate utilization of peer tutors.

Murata (1995), and Murata and Jansma (1997) reported that whenever GPE teachers and students with disabilities were supported by peer tutors, academic learning time (ALT) variables in GPE programs approached levels equal to those accumulated with students without disabilities. However, whenever students with disabilities were left unattended (i.e., without peer tutor or teacher assistant support), successful motor activity engagement and knowledge variables were reduced considerably (Murata & Jansma, 1997).

Within GPE classes students without disabilities could be designated, on an alternate basis, to provide support in a cooperative manner with students who are disabled. Students without disabilities following this alternating strategy are able to participate in the GPE and learn to interact cooperatively with one another. Relatedly, some students with disabilities come to physical education with an assigned teacher assistant. As with peer tutors, teacher assistants can be valuable resources within a GPE context.

Teacher Assistants. Teacher assistants are often employed to work in special education classrooms. Once seen only as a teacher's helper (Gerlach, Pickett, and Vasa, 1992), teacher assistants are now offered more autonomous roles and responsibilities within the educational setting. For example, teacher assistants can be used to facilitate instruction, apply behavior management principles, independently work with small groups of students, and be an extra set of eyes for the teacher (Vogler, French, & Bishop, 1989). Traditionally, teacher assistants' roles were non-instructional in nature with limited opportunities for teaching, testing or assessing student performance. However, as the move towards inclusive education continues, teacher assistants will likely be designated more specific roles and even greater responsibilities (Stillwell, 1995; Vogler, French, & Bishop, 1989).

Co-Teaching

As the field of special education continues to change, special educators may find themselves in general education classrooms teaching "along-side" general educators. Their role in such settings may become one of co-teacher, with opportunities to share duties and responsibilities. This collaborative role sharing will allow both the generalist and special educator to provide input with respect to such teacher-related variables as testing, assessment, planning, teaching, and follow-up. Moreover, adapted physical educators are likely to find themselves in very similar cooperative and co-instructional roles with the general physical educator. As one example, Murata and Little (1995) reported that part-time (PTT) adapted physical education teachers in one school district in Hawaii teach "along-side" general physical educators and elementary classroom teachers. The use of PTT as co-teachers was determined to be an effective way to include students with disabilities into GPE (Murata & Little, 1995).

Cooperative Learning Groups

"Cooperative learning is an instructional 'best practice' decision that applies ideas related to student learning across the psychomotor, cognitive, and affective domains (Grineski, 1996, p. 23). Orlick (1978) suggested that cooperative learning is an effective way for all students to participate in physical education while working on specific goals and objectives. Cooperative learning strategies employ four ingredients: (a) forming teams, (b) positive interdependence, (c) individual accountability, and (d) collaborative skills (Grineski, 1996, p. 23).

The selection of team members (i.e., forming teams) should be conducted with consideration given to such variables as heterogeneity with respect to gender, race and ethnic identity, and ability levels. When utilizing a cooperative learning tactic, pairings are formed in order to enhance cooperation and critical thinking skills, and to maximize participation (Grineski, 1996; Dunn & Wilson, 1991). This initial pairing strategy allows smoother transitions from pairs to larger groups interactive behaviors.

Perhaps the most salient factor to consider is the positive interdependence of cooperative learning. Positive interdependence suggests that learning occurs when the goals from one student are met by the goals of another student. This joint effort promotes a sense of "I need you and you need me" in order to accomplish this task (Grineski, 1996).

Whenever a teacher's desired outcome is for student learning to occur, then individual accountability measures become critically important. In this regard, Grineski (1996) discussed the following three strategies to promote individual accountability: (a) the teacher asks students for an explanation or to demonstrate a skill; (b) students share directions and strategies; and (c) teacher organizes activities to make sure all are needed.

Collaboration can be defined as a process of problem solving by team members, each of whom contributes his/her knowledge and skills with equal status (Maguire, 1994). The art of collaboration requires that students and teachers develop listening skills, exhibit behaviors that are supportive and encouraging to others, learn conflict resolutions tactics, and other cooperative behaviors (e.g., taking turns) (Dunn & Wilson, 1991; Grineski, 1996; Maguire, 1994).

Curricular Adaptations

All students participating in GPE are unique. Generally speaking, despite the uniqueness of all individuals with and without disabilities, most physical education curricula are appropriate and germane. However, when programming for students with disabilities to function successfully in GPE classes, portions of the curriculum may need to be altered to best meet IEP goals and objectives for those students. For instance, the functionality of the curriculum may mean that the physical education program is held at a community facility (e.g., local bowling alley) which focuses on skills that the students can use now and will require in the future (Block, 1992). Moreover, in conjunction with making modifications in the curriculum, the physical educator can select from three options which might assist him or her in addressing IEP goals and objectives of those students with disabilities. These three options are: (a) allowing the student with disabilities to participate in the GPE class with identical learning outcomes essentially implemented the same way as with his or her nondisabled peers, (b) utilizing a multi-level curriculum and teaching approach, and (c) curricular overlapping (Giangreco, Cloninger, & Iverson, 1993).

Identical learning outcomes suggest that the physical educator teaches his/her lessons the same way to all students with minimal accommodations for students with disabilities. More important, if the physical educator already uses a variety of teaching styles, he or she is already attempting to address individual differences that are likely to accommodate the predominate learning style of a student with disabilities.

The multi-level curriculum and teaching option suggests that in order to meet the uniqueness of a diverse group of learners, functional and appropriate goals and objectives are emphasized within the curriculum (Giangreco, et al., 1993). During a soccer unit, for example, while the class is engaged in a practice drill for dribbling, the student who uses crutches might be dribbling the ball with either his/her foot or crutch. All students are working on the essential skill or task, and the goals and objectives are also being met for the student who is disabled.

The curricular overlapping option creates a situation whereby students are working from the same curriculum unit, but pursue varied goals and objectives from across different curricular areas (Block, 1994; Giangreco, et al., 1993). "When curricular overlapping takes place, the general education class activity is used as a vehicle to teach other goals (Giangreco, et al., 1993, p. 23). In a basketball unit, all students without disabilities might be working on dribbling while alternating hands up and down the court, as the student who uses a wheelchair works on mobility and cardiovascular endurance by propelling him/herself up and down the court.

Tactical Approach

Traditional physical education programs generally emphasize a developmental approach in which students learn skills, that often culminates into a game situation or tournament (Siedentop, 1991). There is an emerging trend, however, that focuses on the teaching of tactics: the tactical approach (Siedentop, 1996). More specifically, the tactical

approach is a method by which tactical awareness of game situations are introduced at the onset (Olsin, 1996; Werner, Thorpe, & Bunker, 1996). Students are allowed to "play the game" with specified conditions (e.g., modified rules, small group activities) created by the teacher. Recently, this approach has been receiving considerable attention in physical education (Olsin, 1996; Werner, et al., 1996; Werner & Almond, 1990). This approach with its emphasis on game appreciation, modified activities, constant game involvement, small groups, and large group activities makes it ideal for teaching students with special needs.

Summary

The attitudinal research findings and practical pointers presented within this paper are supported by the general and special education literature databases. To be highlighted is the fact that general physical educators can and should adjust their programming decisions to best accommodate students with disabilities without adversely affecting the physical education program for students without disabilities. We hope these practical pointers provide physical educators with ideas that will help them reasonably accommodate learners with diverse needs, interests, and abilities in GPE.

References

Block, M.E. (1992). What is appropriate physical education for students with profound disabilities? Adapted Physical Activity Quarterly, 9, 197-213.

Block, M. E., & Krebs, P.L. (1992). An alternative to least restrictive environments: A continuum of support to regular physical education. Adapted Physical Activity Quarterly, 9, 97-113.

Block, M.E. (1994). Including children with disabilities in regular physical education. Baltimore, MD: Brookes.

Block, M.E., & Vogler, W.E. (1994). Inclusion in regular physical education: The research base. Journal of Physical Education, Recreation and Dance, 65(1), 40-44.

Block, M.E., & Garcia, C. (1995). Including students with disabilities in physical education. Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.

Block, M.E., Oberweiser, B., & Bain, M. (1995). Using classwide peer tutoring to facilitate inclusion of students with disabilities in regular physical education. Physical Educator, 52(1), 47-56.

Block, M.E., & Zeman, R. (1996). Including students with disabilities into regular physical education: Effects on nondisabled children. Adapted Physical Activity Quarterly 13(1), 38-49.

Bruininks, R.H. (1978). Bruininks-Oseretsky test of motor proficiency: Examiner's manual. Circle Pines, MN: American Guidance Service.

Craft, D.H. (1994). Implications of inclusion for physical education. Journal of Physical Education, Recreation and Dance, 65(1), 54-56.

Dunn, S.E., & Wilson, R. (1991). Cooperative learning in the physical education classroom. Journal of Physical Education, Recreation and Dance, 62(6), 22-28.

Gay, L.R. (1992). Educational research: Competencies for analysis and application (4th ed.). New York, NY: Merrill.

Gerlach, K., Pickett, A.L., & Vasa, S.F. (1992). Strengthening the partnership: Para-educators and teachers working together. Bremerton, WA: Olympic Educational Services District #114.

Grineski, S. (1996). Cooperative learning in physical education. Champaign, IL: Human Kinetics.

Giangreco, M.F., Cloninger, C.J., & Iverson, V.S. (1993). Choosing options and accommodations for children. Baltimore, MD: Brookes.

Hodge, S.R., Murata, N.M., & Jansma, P. (1993). Physical educators' perceptions of inclusion inventory. Unpublished perceptual inventory. The Ohio State University, Columbus, Ohio.

Hodge, S.R. & Jansma, P. (1997). Attitude change of physical education majors toward teaching students with varied disability types. Manuscript submitted for publication.

Hodge, S.R. & Murata, N.M. (1997). Validity and reliability of an inclusion inventory for physical educators. Unpublished manuscript. The Ohio State University, Columbus, Ohio.

Houston-Wilson, C., Lieberman, L., Horton, M., & Kasser, S. (in press). Peer tutoring: An effective strategy for instruction of all abilities. Journal of Physical Education, Recreation and Dance.

Kowalski, E.M., & Rizzo, T.L. (1996). Factors influencing preservice student attitudes toward individuals with disabilities. Adapted Physical Activity Quarterly, 13(2), 180-196.

Lieberman, L.J. (1996). The effects of trained hearing peer tutors on the physical activity levels of deaf students in inclusive elementary school physical education classes. Unpublished dissertation. Oregon State University, Corvalis.

Maeda, J., & Murata, N.M. (1997). Physical educators' perceptions on inclusion: A Hawaii school district perspective. Manuscript submitted for publication.

Maguire, P. (1994). Developing successful collaborative relationships. Journal of Health, Physical Education, Recreation and Dance, 65(1), 32-36.

Melograno, V.J., & Loovis, M.E. (1991). Inservice training: alternative criteria for determining effectiveness. Journal of Physical Education, Recreation, and Dance, 62(4), 64-66.

Meyer, L.H., Eichinger, J., & Downing, J. (1992). Program quality indicators (PQI): A checklist of most promising practices in education programs for students with severe disabilities (2nd ed.). Syracuse, NY: Syracuse University.

Meyer, L.H., & Eichinger, J. (1994). Program quality indicators (PQI): A checklist of most promising practices in educational programs for students with disabilities (3rd.). Syracuse, NY: Syracuse University.

Murata, N.M., Hodge, S.R., & Jansma, P. (1994). Physical educators' perceptions of inclusion. Future Focus, 15(2), 7-15.

Murata, N.M. (1995). The effects of physical educators, teacher assistants, and peer tutors on the academic learning time of students with and without disabilities in regular physical education. Dissertation Abstracts International, 56(09), 3502A. (University Microfilms No. AAI95-44650).

Murata, N.M., & Little, J.R. (1995). A continuum of support to facilitate inclusion: A Hawaiian model. Palaestra, 11(3), 17-22.

Murata, N.M., & Hodge, S.R. (1997). Training support personnel in inclusive physical education: Implications for physical educators. Manuscript submitted for publication.

Murata, N.M., & Jansma, P. (1997). Influence of support personnel on students with and without disabilities in general physical education. Manuscript submitted for publication.

Olsin, J.L. (1996). Tactical approaches to teaching games. Journal of Physical Education, Recreation, and Dance 67(1), 27.

Orlick, T. (1978). The cooperative games and sports book. New York, NY: Pantheon Press.

Roper, P.A. (1991). Are researchers missing the boat on inclusion? Palaestra, 8(1), 50-54.

Sherrill, C., Heikinaro-Johansson, P., & Slininger, D. (1994). Equal-status relationships in the gym. Journal of Physical Education, Recreation and Dance, 65(1), 27-31.

Siedentop, D. (1991). Developing teaching skills in physical education. Mountain View, CA: Mayfield.

Siedentop, D. (1996). Physical education and education reform. In S.J. Silverman, & C.D. Ennis (Eds.). Student learning in physical education: Applying research to enhance instruction. (pp. 247-267). Champaign, IL: Human Kinetics.

Stillwell, J. (1995). The paraprofessionals in the physical education program. Teaching Elementary Physical Education, 6(1), 11.

Vogler, E.W., French, R., & Bishop, P. (1989). Paraprofessionals: Implications for adapted physical education. The Physical Educator, 7, 69-76.

Webster, G.E. (1987). Influence of peer tutors upon academic learning time-physical education of mentally handicapped students. Journal of Teaching in Physical Education, 7, 393-403.

Werner, P., & Almond, L. (1990). Models of games education. Journal of Physical Education, Recreation, and Dance 61(4), 23-27.

Werner, P., Thorpe, R., & Bunker, D. (1996). Teaching games for understanding. Evolution of a model. Journal of Physical Education, Recreation, and Dance 67(1), 28-33.

Adapted Physical Education—Accommodation or Innovation?

Laura Hunter
The GymSkills Program, Toronto, Ontario, Canada

Adapted physical education is an *innovative process* which involves the development, promotion, and provision of adaptations to increase individual and group participation in sport, recreation and fitness.

In the process of providing adapted physical education, skill breakdown and program planning are as important as the provision of the technology. All these elements must be integrated if we are to develop personalized programs that promote both skill development and increased independence.

The GymSkills Learn to Bike Program was developed with the goal of teaching any child to successfully ride a bike regardless of their level of ability. Using this program as an example workshop participants will develop, through task analysis, the step-by-step progressions that will lead a child to a successful bike riding experience. Participants will also be invited to share programming issues, solutions and alternatives from their own experiences.

We are planning to have some adapted bikes on hand, so come prepared to ride!

A Practical Application of Aquatics for Persons with Disabilities

Lorraine E. Bloomquist
University of Rhode Island

Pool Activities Practicum. If participation in the pool is desired, please bring suit, towel and sweatshirt.

The purpose of the pool practicum activities will be to experience teaching techniques for people with various abilities and individualizing the teaching methods. We will consider warm-ups, safety concerns, emergency procedures, accessing the pool, reflex inhibitions, seizure control and individual techniques with people who are sensory impaired or physically challenged. Time permitting we will experience appropriate games.

Equipment needed: mats, one wheelchair, noodles, ski belts, ties (cravattes or kerchiefs)

- ***Warm-ups:*** preparation for class, individualized, positions used
- ***Entrance:*** methods, lifts, motivation, etc.
- ***Simulations:*** sensory impairments, physically challenged (spinal cord injury, cerebral palsy, etc.)
- ***Game:*** circle formation, brief game relevant to class needs and skill level
- ***Task analysis:*** participants individualize teaching of a specific swimming skill, 1/1, based on ability and skill level; roles will be reversed
- ***Emergency procedures:*** seizure control and evacuation drill with lifeguard
- ***Game:*** brief game to experience social interaction, employ swim skills and end on an upbeat note

AAALF and the Alliance: Partners in Fitness Education

Janet A. Seaman, Executive Director
American Association for Active Lifestyles and Fitness (AAALF)

"Physical Best" is the name of AAHPERD's fitness education program and one of its most popular components is the manual—Physical Best and Individuals with Disabilities. The manual is designed to assist professionals in the mainstream of education, recreation, corporate, or community fitness and other activity programs to include individuals with disabilities in their physical fitness testing and educational programs.

In the past, "not taken" was recorded for test items that students' disabilities prevented them from taking. Another course of action was to obtain copies of tests designed to measure the same fitness component, but normed on a specific disability group. Now, alternate test items and norms will be presented in one single manual. Finally, the results of research have intersected with practice in the measurement of health-related physical fitness. Agreement has been reached by practitioners and researchers on the four fitness components at the foundation of health-related fitness for all people—aerobic capacity, body composition, flexibility and muscular strength and endurance.

As a member of the Physical Best family of fitness education materials, this manual uses as its reference point, the Prudential Fitnessgram health-related fitness test, a partner to Physical Best. Although many of the test items contained in Fitnessgram can be used with some individuals with disabilities, alternate test items are still needed for others. It is recognized that some agencies and schools use other fitness tests; however this manual will help expand on other protocols to include individuals with disabilities. Therefore, all the suggestions presented have a generic base for measuring the four main fitness components with alternate items and norms that collectively should accommodate virtually all individuals for whom fitness test data is needed.

Fitness for Individuals with Disabilities

Individuals with disabilities have lifestyles as diverse as individuals without disabilities:

- life consisting of a great deal of leisure time
- occupations requiring physical labor demanding muscular strength and endurance, flexibility and/or various levels of aerobic capacity
- sedentary occupations
- limited ambulation because they are in wheelchairs or are blind
- sport participation and individual interests or preferences

Thus, the health-related fitness profile for individuals with disabilities needs to be personalized according to: 1) disability, 2) daily living needs, 3) current activities and 4) potential for the future. In contrast, fitness education and testing programs for individuals without disabilities have traditionally emphasized expectations for achievement in all four fitness components.

A recent trend toward the use of criterion-referenced standards rather than norm-referenced standards provides a mixed benefit for individuals with disabilities. On one hand, the criterion, called the "Healthy Fitness Zone" in The Prudential FITNESSGRAM, represents a goal (range of scores) that is desirable to achieve and supported by research. On the other hand, for individuals with disabilities, if that goal or score is not reached, it is unknown where, off the scale, a given performance falls. Would a given score place an individual in the lowest 5% of the population? ... 10% or 30%? With only Healthy Fitness Zones to refer to, the answer to this question is unknown. Norm-referenced standards are required when determining placement for

individuals with disabilities, writing individualized educational plans and establishing annual goals. It is essential to be able to compare performance scores from one year to the next, and to compare with meaningful and appropriate standards for health-related fitness.

Promoting an active lifestyle as well as preparing individuals for the physical and motor demands of their adult lives are important program goals for physical education, recreation and other community-based activity programs. Individuals with disabilities deserve to derive the same benefits from health-related fitness activities as others and to live lives free from disease, enriched with physical activity and healthy lifestyle practices.

Physical Best and The Prudential FITNESSGRAM

The manual assumes that The Prudential FITNESSGRAM forms the foundation of the fitness program. Professionals are encouraged to use The Prudential FITNESSGRAM test to the greatest extent possible. Guidelines on how to modify test items, in general, and what should be considered to ensure safety and avoid aggravating specific conditions are contained in the manual. Suggestions are included for modifying specific test items, but further modification may be needed for a given individual. The Prudential FITNESSGRAM, itself, has alternate items for some fitness components that may be used in their published form or modified according to the guidelines provided in the manual. An entire chapter is devoted to alternate test items and norms used in tests for individuals with specific disabilities. Two chapters focus on task analysis, modifying recognition awards and program ideas for incorporating individuals with disabilities into fitness activities. Resources are given for professionals who wish to pursue other resources for their own needs.

Writing Team

A project of this magnitude is not undertaken without extraordinary efforts on the part of professionals who believe in the concept. This product is the result of three organizations working together. Fueled by the energy of a California (CAHPERD) Task Force, the idea caught on at the AAHPERD headquarters. The Office of Constituent Services of AAHPERD, the American Association for Active Lifestyles and Fitness (AAALF formerly ARAPCS) headed up the effort on the national level. Thus, three groups came together to produce one comprehensive and complete manual. The California Task Force members evaluated and contributed alternate test items comprising the bulk of the manual. AAHPERD/AAALF provided the writers and support for the rest of the manual and its production. The task force and writing team members' names are given below. Reviewers included Diane Craft, Susan Grosse, Jeff McCubbin, Dale Ulrich and the Physical Best Steering Committee.

California Task Force on Alternate Test Items (Chapter 5)

Janet A. Seaman, Chair	
Dan Cariaga	Kris Corless
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Physical Best and Individuals with Disabilities Writing Team

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(AAALF is one of six national associations of the American Alliance for Health, Physical Education. Recreation and Dance - AAHPERD)

PANEL DISCUSSION
Raising a Child with Disabilities in the Family

Cathy Crain, Michael Davey, and Loran Erdmann
West Central Illinois

This is a discussion regarding the challenges (and opportunities) of raising children with special needs. All participants are parents of such children and will address situations regarding parental involvement in accurate medical evaluations, services available, schooling, and legislation. The most important issue of concern will be how the responsibility of rearing "special" children impacts the entire family (marriages; other children; occupations; and general family survival). Emphasis will also be placed on "advocacy starts at home" and parents need to know where, how, and who can help them push for the rights of their children. Each parent will share their experiences and the knowledge they gained (and plan to gain) as they travel the road to being a good parent of a "special" child.

Audience participation will be encouraged and questions can be submitted at the beginning of the dialogue for inclusion in the interaction.

The participants are:

- Cathy Crain—mother of Michael Grove—visually impaired 21 year old; diagnosed with Biedl/ Bardot/Laurence/Moon Syndrome
- Michael Davey—father of a teenage son diagnosed with ADHD
- Loran Erdmann, WIU, Discussion Leader

Preparing Students with Disabilities for Spring Break '97

Jayne Swercinski and Lisa Burres
Maple Valley State School, Kansas City, Missouri

HELP ME RHONDA, HELP, HELP ME RHONDA ... Are the winter blahs creeping through your school? Does spring seem light years away? Come hit the beach with us! Take a break from the routine and offer a mini-unit loaded with fun in the sun. Catch a wave and surf into great games and activities with a beach theme. Be prepared to participate today in activities that are easily adapted to all students' varying ability levels. We will provide you with ideas for games, decorations, cross-curricular material, all-school activities and equipment suppliers. Life's a beach ... surf's up!

Activities

Tactile Activities
- Jello pool: fill small pool with Jello
- Water play: wading pool, fishing
- Sand art: salt and chalk creations
- Seashell search: hide shells in sand
- Decorate visors
- Face painting
- Feet burial (in sand)
- Temporary beach tattoos
- Boat races

Beach attire
- Monday: Sunglasses Day
- Tuesday: Hat/Visor Day
- Wednesday: Hawaiian Day
- Thursday: Crazy Shirt Day
- Friday: Beach Bum Day

All-School or Group Activities
- Hula Hoop Contest
- Luau
- Dry T-shirt Contest
- Picnic
- Beach Bum Parade

Cross-Curricular
- Oceans/Sea Life
- Weather
- Spelling
- Geography

Games

Following are several beach-related games. With a touch of imagination and a few props, you can convert many games and use them during the Beach Week unit. These activities are easily adapted to allow all students to participate.

Sea Horse Races at Coral Reef Downs
This game challenges the teams to complete the racetrack course as many times as they can before time expires.
- Divide students (sea horses) into teams.
- Line teams up at the "gates" in line formation.
- Sea horses follow the track, overcoming coral reef obstacles, return to the start and tag the next competitor.
- Sea horses can be requested to swim forward, backward, on scooters, etc.
- Races are over when time has expired. Allow enough time for all students to participate 2-3 times.

Challenge option: Station students on the inside and outside of the track to throw lightweight "sea matter" obstacles (beach balls, yarn balls, foam) at the racing sea horses.

Beach Ball Relay

- Divide participants into teams.
- Form a line.
- First participant in line passes a beach ball through their legs to second person who passes it over their head. Continue this pattern until the ball reaches the last person who runs to the front of the line and begins the relay again. Relay is over when the line is returned to its original formation.

Jaws

Jaws is a tag game. Set up the game by designating a "safe" beach and water area.

- 3-5 students are sharks (use fins).
- 2 students are angelfish (use halos).
- Remaining students represent ocean life.
- Music/timer is set for 60-90 seconds.
- Sharks attempt to tag all ocean life. When they are tagged, they drop to tall kneeling and wave their arms like seaweed.
- Angelfish "save the day" by tagging seaweed allowing them to return to ocean life.
- Ocean life participants can use the "safe" beach for 5 seconds and then must flee.
- Stop game when music stops/timer sounds and change roles.

Beach Volleyball

Play beach volleyball with beach balls, floaters or other lightweight balls. Adapt net height and rules as needed.

Body Surfing

Set up game with a beach area, large water area with a sand bar on the far side. The surfers are stuck on the sand bar and only have one surfboard to use to get themselves to the beach.

- Surfers are divided up into teams. Each team has one surfboard (scooter).
- Position surfers on the sandbar. The object is to get all of them to the beach safely.
- One surfer lies prone on scooterboard. Second person holds their feet and "surfs" the scooterboard to shore. As they reach the shore, the second person grabs the scooterboard, swims out to the sand bar, lies prone as the next person "surfs" he/she to shore.

The Paralympic Movement—Yesterday, Today, and Tomorrow

Robert D. Steadward, President
International Paralympic Committee

Seventy-three years ago, the first international disability specific sports event took place. Three quarters of a century later we stand on the threshold of a magnanimous achievement as our athletes prepare to demonstrate to the world, athletic excellence of the highest order and to receive full Olympic medal recognition.

To those pioneer spirits, to those pioneer athletes, to everyone who has persevered to bring us such an important point in history, I would like to pay tribute to you at this point. Who would have believed that the early efforts of a few determined volunteers and courageous athletes would bring us to where we are today?

The first world games for the deaf in 1924 marked the genesis of an incipient disability sport movement. Yet there followed a quarter of a century of mediocrity regarding progress, until Dr. Ludwig Guttman inaugurated the first Stoke Mandeville games in 1948. Thus began what might be termed, the medical-rehabilitation era of disability sport. For over forty years, a medical philosophy drove a developing sport model, a model principally based on a disability specific sport and a medical classification system. From 1960, with the development of ISMGF, to 1986 with the development of INAS-FMH, the development of disability specific sports organizations was paralleled by disability-specific sports interests and a subsequent growth of diversity, self interest, and segregation. Thus athletes with different disability types took part in their own sports spectacles. The development of the ICC in 1982 signalled a recognition of a need for unity and cooperation and a shift to a sport-specific model of sport. The ultimate recognition of the paradox of diversity in organizations and unity in disability was addressed in the creation of the International Paralympic Committee in 1989. Consistent with the shift in philosophy from a disability specific to a sport specific model has been the development of a conviction based on athletic excellence and ongoing experimentation with an integrated functional classification system.

The evolution of the International Paralympic movement has been paralled by the evolution of athletic excellence. Dramatic improvements in performance of Paralympic athletes are a function of: improvements in knowledge of volunteers, coaches, and athletes; improvements in the technologies associated with performance (e.g., prosthetics and wheelchair design); and increased interest on the part of the scientific community and media.

However, success and excellence are not achieved without challenge; and as the disability sport movement has grown, so too have the issues facing disability sport organizations and the International Paralympic movement. A number of salient issues have come to the fore, not least of which are the issues of inclusion and integration. Despite the demonstration events that have taken place at numerous world and Olympic games events, there has yet to be bestowed full medal status on a Paralympic athlete at the Olympic games. A source of considerable internal conflict among athletes with disabilities, the inclusion of full medal events in the Olympic games also represents the ultimate achievement for Paralympic athletes. The greatest challenge may therefore reside in the solidification of the relationship and community with the IOC as a symbol of inclusion of athletes with disabilities at what are perceived as the ultimate levels of sport performance. As well, the International Paralympic family struggles with issues of equity in the realm of women's involvement in sports and the perennial difficulties associated with classification. In the context of the assumptions of the normal distribution

in the area of statistics and sampling, how does one produce equity in the performance arena in an area characterized by an abnormal distribution of ability within an abnormal distribution of disability? Marketing, television and communication present significant challenges to the IPC as it attempts to inform the world about disability sport and about the abilities and commitment of its athletes. Finally, it might be argued that able bodied sport at the elite level has increasingly become based on a utilitarian philosophy driven by the interests of business and entertainment. This has resulted in a number of challenges that arguably have intruded into the disability sport arena including performance enhancement issues and sponsorship. The International Paralympic Committee and disability sport movement are in the unique position of taking from the lessons of the past and integrating them into a strategic philosophy and strategy in order to predict and ameliorate these problems. Thus the IPC has developed an athlete centred approach, in which the athlete is at the centre of the stage, a philosophy which respects and fosters the autonomy of athletes while recognizing their fundamental importance to the development of the International Paralympic movement, a philosophy which is committed to the highest ideals and principles of Olympism.

The rise of the International Paralympic movements, the inauguration and development of the International Paralympic Committee, the remarkable achievements of athletes with disabilities are symbolic of a fundamental challenge to historical assumptions regarding the nature of disability and the capabilities of persons with disabilities. This marks the end of an era of medical dogma and patriarchal stance regarding the treatment of persons with disabilities. Such assumptions have been decimated by athletic performances and athletic excellence which bear testimony to the strength of the human will and spirit.

Olympic Access
Design for Athletes, Spectators, and Employees

Kim Allen Beasley, AIA, Director of Architecture
Paralyzed Veterans of America

The 1996 Olympic and Paralympic Games were the most accessible ever held. Because of careful planning for both facility design and operational procedures, people with disabilities enjoyed expanded opportunities to participate as spectators, employees, volunteers, and athletes. The Paralyzed Veterans of America assisted the Atlanta Committee for the Olympic Games and the Atlantic Paralympic Organizing Committee, to integrate people with disabilities into all aspects of the Games.

The Paralympic Village, as well as the Centennial Olympic Village, provided unprecedented access to thousands of individuals with disabilities, including athletes, coaches, sports officials, and others who used the facilities during the competitions. The Village's success, particularly for persons with disabilities, can be attributed to the strong commitment of top-level management to the design of a barrier-free environment and a planning process that addressed key operational issues.

Introduction

The 1996 Centennial Games in Atlanta, Georgia, provided full inclusion for millions of persons with disabilities that attended the Olympics from countries around the world. Barrier-free facilities constructed for the Atlanta Olympics directly benefitted spectators and participants in the Paralympics. Many factors also influenced Atlanta's unprecedented commitment to the needs of persons with disabilities. One important factor was the Americans with Disabilities Act (ADA), a new law enacted July 26, 1990. ADA provides comprehensive civil rights protection to individuals with disabilities in employment, public accommodations, state and local government services, and telecommunications. An estimated 49 million Americans with disabilities are now protected by this historic Act.

Another positive factor has been the Olympic tradition which has always embraced diversity among nations and cultures. Consistent with this history, Atlanta Olympic and Paralympic officials developed comprehensive management policies that ensured participation for persons with disabilities in these important international events.

A third factor in Atlanta's success was the availability of timely technical assistance. The Paralyzed Veterans of America, and others, provided technical consulting and advice to the Atlanta Olympic and Paralympic Organizing Committees to help them achieve full participation for people with disabilities. Many successful accessibility solutions that were developed in Atlanta can be applied to future Olympic Games. The purpose of this paper is to share successful facility development strategies used in Atlanta, particularly for the Olympic and Paralympic Villages.

Design Standards for Sports & Recreation

Before I address specific Paralympic Village design issues, it may be helpful to understand the background and current status of U.S. design standards for accessibility. U.S. standards for accessible design have evolved steadily since the first American National Standards (ANSI A117.1) were published in 1961. Parallel advances in medicine and innovations in medical technology have allowed more people to live longer and to better overcome limitations imposed by physical disabilities. Social attitudes regarding persons with disabilities have also changed which has allowed this group to become more "mainstreamed" into the fabric of society. Standards for accessible design have been continuously modified and improved to reflect these changing technologies and social attitudes.

The emergence of the Paralympics exemplifies the achievements of disabled athletes. The 1996 Olympic Games was the first time that the Paralympics were an integral part of the Olympic experience. Paralympic athletes, some of whom are former Olympians, have dispelled commonly-held attitudes concerning persons with disabilities. Their achievements have also caused architects and planners to reconsider many fundamental assumptions concerning accessibility in sports facility design.

The Americans with Disabilities Act has had a major effect on all types of facilities constructed in the United States. The ADA design standards ensure that not only public facilities are accessible, but also employee areas. The Atlanta Olympic effort proved to be an interesting test case for the application of ADA design standards. In many cases, the unique components of complex sports facilities have required development of new design strategies. For example, one of the most challenging problems for sports facilities design has been wheelchair seating. Historically, wheelchair accommodations were created by removing seats from the back rows, an approach which often resulted in seating in less-desirable locations. In addition, accommodations were often not made for ambulatory companions.

Providing accessibility to individuals with disabilities in an integrated setting is a fundamental ADA tenet. Consistent with these objectives, ADA design standards not only specify a minimum number of wheelchair locations, but also require that they be dispersed in locations throughout the stadium. Other questions arose during the design of the Atlanta facilities.What is a proper line-of-sight for a wheelchair user, particularly when spectators rise to a standing position in the row in front during the most exciting part of the competition? How much dispersal for wheelchair seating can be practically provided? Innovative design solutions in Atlanta addressed these challenges.

During Olympic and Paralympic planning, draft guidelines for sports facilities and outdoor recreation elements were developed by the United States Architectural and Transportation Barriers Board through a special Federal Advisory Committee. The results of this committee's work were helpful to the designers for the Atlanta Olympic and Paralympic Games. Expanded guidelines and standards are now being formally adopted to give similar guidance for the design of other outdoor and recreational facilities that will be constructed throughout the United States.

Paralympic Use of Olympic Facility Design

Olympic facilities are unique in many respects. Both competition and non-competition venue sites included permanent new facilities constructed for the Games and then left as a legacy to the host city. In addition, many existing facilities were altered or expanded to accommodate Olympic events. Finally, a vast arrangement of temporary and portable structures were also installed to augment the permanent facilities during the seventeen-day event. Accommodations for persons with disabilities were an integral part of all permanent and temporary construction.

For instance, the Atlanta Paralympic Organizing Committee adapted Atlanta Olympic facilities for their use during the Paralympic Games. Paralympic construction was limited to minor adaptations to existing facilities, erection of temporary structures and adjustments to newly-completed Olympic venues. This resource limitation underscored the importance of creating fully accessible Olympic facilities, thereby enhancing their use for the Paralympics.

To help ensure successful Olympic facility design, accessibility was an important consideration from the earliest stages of the design process. Design programs contained specific objectives that relate to accessibility. Subsequent design drawings were evaluated against the original design objectives. For the Atlanta Olympics, a formal peer review process was developed for all new venue designs. This process included a detailed review of architectural drawings conducted at each stage of design development, from initial schematics to final construction documents. Design documents were evaluated against accessible design standards and written

findings were presented to each venue design team. Although most U.S. architects have a general knowledge of design standards for accessibility, a consistent application of ADA design standards was ensured through a formal peer review procedure.

Facilities for Olympic athletes and team officials were also designed to be accessible. The basis for this requirement is the premise that these facilities are "places of employment." Sports injuries that commonly result from athletic competition also offer a more practical reason for providing accessible showers, toilet facilities and lockers in sports facilities.

Olympic/Paralympic Villages

In Atlanta, the Olympic and Paralympic Villages were created on the campus of Georgia Institute of Technology. As a self-sufficient residential environment, a university campus is almost a microcosm of a city. The campus typically contains facilities for assembly, entertainment, employment, dining, recreation, and many other daily life functions. The security measures for the Olympic Athlete Village required the provisions of a similar self-contained environment.

In Atlanta, a major challenge in the design of Olympic and Paralympic facilities was achieving a practical balance between temporary, short-term use of facilities and permanent long-term benefits to the host community. New facilities constructed for the Games were often considered part of the "Olympic Legacy."

The temporary use of Georgia Tech as an Olympic village site, resulted in tremendous long-term benefits for the University. The Atlanta Committee for the Olympic Games commissioned, financed and constructed new and expanded facilities on the Georgia Tech campus for Olympic athletic use. Since all new construction and renovation had to comply with the Americans with Disabilities Act, Paralympic athletes became immediate beneficiaries, and thousands of future students with disabilities will enjoy accessible facilities for years to come.

The Paralympic Games presented unique challenges for accommodating the thousands of Paralympic athletes that occupied the university facilities. Since most accessibility standards and building codes specify minimum requirements for building construction, even most new facilities don't adequately meet the needs of a concentrated number of disabled athletes and officials. In Atlanta, this problem was addressed in several different ways. First, new accessible residential facilities were constructed for Olympic athletes and officials. Paralympic athletes and officials were able to effectively use the same facilities. After the Games, these facilities serve as dormitories for Georgia Tech students. The Americans with Disabilities Act (ADA) as well as the 1988 Fair Housing Amendments Act required that virtually all residential rooms, including bathrooms, were usable by persons with disabilities. Most of the Village's dining, entertainment and recreational facilities were temporary; however, ADA required that these facilities provide full access for persons with disabilities.

The Paralympic Village, although not as extensive as the Atlanta Olympic Village, provided the same level of accessibility as the Atlanta Olympics did throughout the Games. In other words, except for minor temporary adjustments to suit individual users, there was nothing unique about the Paralympic Village that was not also provided in the Olympic Village. Where readily removable architectural barriers already existed, steps were taken to do so.

Transportation Systems

A special transportation system provided service for non-public users such as Olympic officials, the press and media, and competing athletes from the Olympic and Paralympic Village. All Olympic transportation systems included lift-equipped buses operated by specially trained personnel. For Paralympic athletes, special temporary ramping systems were designed and constructed to quickly load and unload wheelchair users from modified buses.

The Americans with Disabilities Act requires all public transportation systems including bus, rail, subway, and other forms of mass transportation to be accessible to persons with disabilities, including

wheelchair users. The Atlanta public transportation system included lift-equipped buses and para-transit services. For the Olympics, loaned buses from cities throughout the U.S. helped move as many as 500,000 people each day.

Facility Development Strategies for a Successful Barrier Free Village

Based on our experience with planning for the 1996 Games, we can suggest the following recommendations to future Olympic planners:

1. Create a citizen advisory group comprised of persons with disabilities in order to gain insights on disability issues. The group should represent a broad cross-section of the disability community.

2. Establish planning and design goals early in the process to ensure that all facilities are designed and constructed to be fully accessible to persons with disabilities. Monitor facility design at all stages of project development.

3. Develop detailed operational plans which include provisions for athletes, officials and guests with disabilities. Carefully review operations plans to ensure coordination between staffing and operations.

4. Develop a program for auxiliary aids and services to ensure effective communication for individuals who have sensory impairments. Test alternative solutions at similar pre-event sites.

5. Establish an accessible transportation system to serve the Village. The system should coordinate access from transit stops to pre-planned drop-off points at each competition and non-competition venue.

Creating accessible Olympic and Paralympic facilities will only be achieved through a strong management commitment, careful planning, and consistent monitoring of detailed plans throughout the project development. This commitment of time and resources will prove to be a sound investment, however, for both the Olympics and Paralympics, leaving a legacy of accessible facilities that will be enjoyed by private citizens for many years to come.

Adapted from Original Presentation Given at the Olympic Museum, Lausanne, Switzerland, November, 1986

Resistive Exercise for Older Adults and Cardiac Patients: Practical Considerations

Loran D. Erdmann, Department of Physical Education, Western Illinois University

A recent landmark document on physical activity and health reports the benefits of muscle-strengthening for older adults. Provided are physical activity recommendations which include regular resistive exercise. The report cites the reduced risk of falling and the improved ability to perform the routine tasks of daily life as important reasons for older adults to engage in resistive exercise. (Physical Activity and Health: A Report of the Surgeon General [U. S. Department of Health and Human Services, 1996]). Rogers and Evans (1993), in an excellent review on the effects of training on skeletal muscle with aging, concluded that progressive resistance training programs with sufficient intensity and duration can produce muscle hypertrophy and improved strength in older adults. Load bearing exercise can also enhance bone mineral density in both older men and women (Heath, 1993). A useful overview of resistance training and strength benefits for elderly individuals is provided by Drought (1994). With the increased promotion of resistive exercise for the general population of older adults, resistive exercise is also on the upswing in cardiac rehabilitation programs. In addition to preparing patients for activities of daily living, preparing patients to return to work and leisure activities following a cardiac event are also important outcomes (Drought, 1995).

Screening/Safety/Liability Issues

Although the risks of resistive exercise in older populations and cardiac patients is less than previously thought, safety of such programs is a concern. Physician evaluation and exercise prescription are recommended for persons with symptomatic cardiovascular or metabolic disease, or other chronic health problems. Previously inactive men over age 40, women over age 50, and people at high risk for cardiovascular disease should also seek physician advice before starting vigorous physical activity (Physical Activity and Health: A Report of the Surgeon General [U. S. Department of Health and Human Services, 1996]).

Indications for resistive exercise training for outpatient cardiac patients generally include: (a) four to six weeks after myocardial infarction (MI) or coronary artery bypass graft (CABG), (b) one to two weeks following percutaneous transluminal coronary angioplasty (PTCA) or other revascularization, (c) four to six weeks in supervised aerobic program or completion of Phase II, (d) diastolic blood pressure < 105 mm Hg, (e) peak exercise capacity of > 5 METs, and (f) not compromised by congestive heart failure (CHF), unstable symptoms, or arrhythmia (American College of Sports Medicine's Guidelines for Exercise Testing and Prescription [American College of Sports Medicine, 1995]). Protocols for program screening, informed consent, legal/liability, and safety issues will be addressed.

Program Design

Attention must be given to acute program variables when planning resistive exercise sessions including: (a) choice of exercises, (b) order of exercises, (c) number of sets, (d) rest periods, and (e) loads. Additionally, a chronic perspective must also be addressed (Fleck, & Kraemer, 1987). Recent minimal guidelines for adults suggest resistance training should be performed at least twice per week. At least 8-10 strength developing exercises that use major muscle groups should be completed each session, with at least one set of 8-12 repetitions of each exercise (American College of Sports Medicine's Guidelines for Exercise Testing and Prescription [American College of Sports Medicine, 1995]; A Report of the Surgeon General [U. S. Department of Health and Human Services, 1996]). These recommendations are similar to resistive training guidelines

for healthy adults and low risk cardiac patients provided by the American Association for Cardiovascular and Pulmonary Rehabilitation. These guidelines suggest that resistance training should be performed 2-3 days per week. Exercises that use major muscle groups should be included each session, with 10-15 repetitions performed for each exercise. (Guidelines for Cardiac Rehabilitation Programs [American Association for Cardiovascular and Pulmonary Rehabilitation, 1995]). The above mentioned professional organizations agree that older adults and cardiac patients should (a) avoid isometric exercises, (b) avoid breath holding while lifting, (c) perform every exercise through a full range of motion, and (d) lift and lower weights in a controlled manner using moderate speed. Program design, with emphasis on adherence to established guidelines, will be further discussed.

Load Selection

Testing of muscular strength and endurance will be discussed for older populations. Traditionally, load selections have been based on percentage of one repetition maximum (1-RM). Alternative approaches will be introduced, including the concept of reps-to-failure (Bryant, & Peterson, 1995).

Administrative Concerns

In addition to individual program considerations, major administrative concerns include: (a) selection and availability of equipment, (b) participant numbers, (c) availability of space, (d) availability of time (Fleck, & Kraemer, 1987), and (e) staffing qualifications. Program administration, in light of organizational opportunities and limitations, will be discussed.

References

American Association of Cardiovascular and Pulmonary Rehabilitation. (1995). Guidelines for cardiac rehabilitation programs (2nd ed.). Champaign, IL: Human Kinetics Books.

American College of Sports Medicine. (1995). Guidelines for exercise testing and prescription (5th ed.). Baltimore: Williams & Wilkins.

Bryant, C. X., Peterson, J. A. (1995). Measuring strength: Assessing clients' muscular fitness need not be costly. Fitness Management, 11 (7), 32-37.

Drought, J. H. (1995). Resistance exercise in cardiac rehabilitation. Strength and Conditioning, 17 (2), 56-64.

Drought, J. H. (1994). Resistance training and strength benefits for elderly individuals. Strength and Conditioning, 16(3), 26-30.

Fleck, S. J., & Kraemer, W. J. (1987). Designing resistance training programs. Champaign, IL: Human Kinetics Books.

Heath, G. W. (1993). Exercise programming for the older adult. In J. L. Durstine, A. C. King, P. L. Painter, J. L. Roitman, & L. D. Zwiren (Ed.s.), ACSM's resource guidelines for exercise testing and prescription (2nd ed.), (pp. 418-426). Philadelphia: Lea & Febiger.

Rogers, M. A., & Evans, W. J. (1993). Changes in skeletal muscle with aging: Effects of exercise training. Exercise and Sport Sciences Review, 21, 65-102.

U. S. Department of Health and Human Services. (1996). Physical activity and health: A report of the Surgeon General (S/N 017-023-00196-5). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

Basic Skills and Inclusion of Various Ability Levels

Robert Weber, Greg Binstock, Stella Fern, Dean Larimer, and Virginia Peterson

Catching Skills and Various Ability Levels

Goal: To develop catching skills.

Procedures: Have the students pair up and sit on the floor with their legs in a V position and roll a ball back and forth catching the ball with their little fingers together. When the student can successfully perform this task, have them begin bouncing the ball back and forth catching the ball with the thumbs together. Next have the students vary bouncing and rolling the ball and have the student catch balls below waist high with the little fingers together and those above waist high with the thumbs together. Next have the students move to on their knees and repeat the process. Start with rolling the ball and catching with the little fingers together and then bounce the ball so the student catches with the thumbs together, and finally varying the two skills. Next have the students stand up and begin the process over with rolling balls and low bouncing balls being caught with the little fingers together and balls above waist level caught with the thumbs together. When the students can again catch the ball in the standing position that is rolled and bounced at different levels below eye level, they are ready to progress on to fly balls. I recommend that you have the students use a soft ball like a beach ball, throw from a short distance and always keep the ball below eye level to begin with. A swinging ball might be a good idea here with the ball always below eye level. The student should be told to make their eyes big like Mickey Mouse or something similar since the eyes as the ball passes from above eye level to the hands at or below eye level will blink. Once the student can catch a fly ball below eye level then start having them catch first a balloon, then a beach ball, and then a harder ball or a smaller ball. The size of the ball or object used and the material it is made of should fit the hand size, motor control and disability or ability of the student.

Equipment needs: Rubber balls, suspended balls, deck tennis ring, peanut filled balls, bean bags, foam balls, koosh balls, scarves, balloons, fleece balls, footballs, frisbees, kick balls, punch balls, velcro balls, whiffle balls, soccer balls, plastic lids, nylon sock balls.

Human Football for Integrated Classrooms

Goal: Teach or expose student to football or basketball lead-up skills; catching, throwing, passing and defending.

Procedures: The playing court is divided into six smaller rectangular areas using ropes, cones, or floor tape. End zones are the rectangular areas at each end.

Players on each team are assigned to an area (remember, more rectangles can be used to accommodate more players). Team A tries to advance the ball by passing it down the court to their teammates, while team B looks to intercept and defend. A point is scored when one team's effort reaches the end zone, and vice versa.

There are two basic rules:

1. Keep the ball from touching the floor. If this violation does occur, the other team will receive the ball. The closest opposing player will receive the ball and play resumes.

2. Stay in own area. Violation results in the opposing team gaining control of the ball.

When a point is scored, play is resumed by giving the opposing team the ball at their far end. Rotate the players so experience can be gained in other positions.

Modification:
a. vary ball size
b. instead of throwing, try rolling or kicking (of course, now the ball will touch the ground)
c. pair-off teammates in groups of two—one must catch, and one must throw

Equipment needs: Cones, rope, floor marking tape, different balls like basketball, football, bean bags, rubber balls, foam balls, fleece balls, whiffle balls, velcro balls, koosh balls, deck tennis ring, peanut filled balls, or nylon sock balls.

Throwing Skills and Various Ability Levels

This activity will make suggestions on how to get all students involved in a variety of throwing activities that will be suitable for many different abilities and disabilities.

Throwing an object is only part of the lesson. The second part is hitting the target. Since your budget to buy new equipment is usually low, the materials needed to assist with the throwing skills of all individuals are already in your school. Making this lesson very cost effective, targets could be anything: boxes, paper sheets, or hula hoops. The boxes could be used with the paraplegic student as the primary target. At the same time the paper sheets hung up between volleyball poles could be used for every student from the deaf to the blind individual. For the student who may have excelled through the throwing skills exercise, the use of hula hoops could be implemented. By attaching the hula hoops to a rope and suspending them from the ceiling, the student could throw at the stationary target from more than fifteen feet away. After succeeding at this distance, backing the student up to make the skill more of a challenge would be necessary. Once the student has mastered throwing an object through the stationary hula hoop skill, the instructor can swing the hula hoop to challenge the hand and eye coordination of the student and make the skill very challenging.

Equipment needs: Hula hoops, standards, rope, tennis balls, footballs, bean bags, foam balls, fleece balls, whiffle balls, velcro balls, koosh balls, frisbees, deck tennis rings, cardboard boxes, butcher paper, coffee cans, or waste baskets.

Three Ball Batting

Goals: The purposes of this game are to improve overall physical fitness, to improve quickness and agility, and to improve catching and batting skills.

Procedures: Place three batting tees in a large triangle on the gym floor with a bat and a different color ball at each batting tee. Divide the class into three equal teams with each team assigned to a different batting tee. One member of each team will be at bat to start and hit the ball off the tee and run to first base, while the other members of the team must field their ball and then run and place the ball on the tee so they can bat the ball. Once all team members have batted the ball and progressed to the next base, their team is finished.

Variations
a. Have the players kick a ball instead of batting a ball.
b. Hit suspended ball and run to next base only.
c. Have students use different movement patterns like hop, skip and gallop to move to the next base.

Equipment needs: Three batting tees, three bats, and three different colored balls.

Using Summer Camps to Provide a Developmental Sequence for Physical Activity

Stefanie Opsal and Amy Crowley
University of Wisconsin–Whitewater

The University of Wisconsin-Whitewater developed a Wheelchair Sports Model that defines the development in physical activity for individuals who have a disability. The University setting is an ideal place for young adults to receive instruction in physical activities. A more difficult situation for instruction occurs with youths with disabilities. The diffuse set-up of services in the area of physical education for youths with disabilities combined with a lack of resources can often affect acquisition of skills in physical education. The University of Wisconsin-Whitewater has designed a Summer Camp series that is designed along a developmental sequence and aids in the acquisition of those skills that they miss in physical education. Youths with disabilities can receive instruction in physical activities so that they can progress from one level to another as they move from one camp to another.

The Wheelchair Sports Model has individual athletes going through a series of stages from introductory recreation and leisure activities through to specialized athletics. The first stage is the introductory recreation and leisure stage. This stage aims to make all activities fun while ensuring success for all participants and no formal competition. An example of a program that fits this first stage is the Easter Seal's Camp Wawbeek. The next stage is specific recreation and leisure. This stage focuses on positive reinforcement for all participants and offers a wide variety of activities. The Easter Seal's Pioneer Camp is an example of a camp in this stage. Introductory athletics is the third stage of the Wheelchair Sports Model. The third stage looks for potential in individuals that have been late in developing and focuses activities on the use of sport specific skills. The University of Wisconsin-Whitewater's Junior Warhawk Wheelchair Sports Camp is a sample program in this stage. Competitive athletics is the fourth stage; within this stage good effort is rewarded regardless of the outcome. Sample programs in this stage include the University of Wisconsin-Whitewater's Junior Outreach Program, the UW-Whitewater's Junior Warhawk Wheelchair Basketball Camp, and the UW-Whitewater's Varsity Warhawk Wheelchair Basketball Team. The final stage of the Wheelchair Sports Model is specialized athletics. This stage has a significant reduction in the number of athletes involved; this is the elite level of athletics. Examples of this stage would be the UW-Whitewater's Warhawk Ultimate Adventure Camp and the UW-Whitewater's Varsity Warhawk Wheelchair Basketball Team.

The Summer Camp series begins with the Junior Warhawk Wheelchair Sports Camp (JWWSC). The JWWSC is part of the introductory athletics component of the Wheelchair Sports Model. This camp is an introductory level wheelchair sports camp where individuals are given basic instruction in a wide variety of wheelchair sports. The focus is on instruction in a wide range of sport specific skills. Participants are given instruction in wheelchair tennis, wheelchair basketball, wheelchair track and road racing, swimming, and general fitness. The camp is held on the University of Wisconsin-Whitewater's campus and the participants stay in the residence halls. Developing independence is the key to this camp. Participants learn to become as independent as possible at this camp and begin to develop a good self-esteem and feeling of self-worth.

The second camp in the Summer Camp series is the Junior Warhawk Wheelchair Basketball Camp. This camp is part of the competitive athletics component of the Wheelchair Sports Model. This camp focuses exclusively on wheelchair basketball skills. Participants start focusing on developing sport specific skill for wheelchair basketball. The main focus of this camp, however, is to reward effort regardless of outcome.

The University of Wisconsin-Whitewater's Junior Outreach Program falls into the competitive athletics component of the Wheelchair Sports Model. The participants are involved in a variety of competitive athletics and recreation activities that are available for them to be a part of in society. Activities such as swimming, wheelchair basketball, wheelchair football, wheelchair soccer, bowling, gymnastics and fitness are all part of this program. This camp also helps the participants with socialization aspects of their lives. The children involved range in age from 8-18 and serve as teachers for each other. The more experienced and independent participants provide great role models for those with more dependent tendencies, and they learn from each other and help each other become successful.

The last camp is part of the specialized athletics component of the Wheelchair Sports Model. The activities at this camp offer individuals a personal challenge that requires a special commitment. The Warhawk Ultimate Adventure Camp challenges individuals in a variety of areas including camping, high and low elements of a ropes course, rock climbing, repelling, whitewater rafting, hang gliding, water skiing, and caving. The participants are paired up one on one with a staff member throughout the camp.

The staff at the University of Wisconsin-Whitewater's Summer Camps are highly qualified and experienced individuals. Many of the staff are students at the university and have worked in the Wheelchair Athletics and Recreation Program for many years. All of the staff members have experience working with individuals with disabilities or are disabled themselves. The philosophies of the program are adopted by all the staff and are to be followed closely. This means that the Wheelchair Sports Model is followed by every staff and volunteer member involved with the Wheelchair Athletics and Recreation Program.

Each of the camps developed at the University of Wisconsin-Whitewater has instruction designed to meet developmentally appropriate goals in the physical, cognitive, motor, and affective domains. All of these domains are an important part of the Wheelchair Sports Model, and all must have goals and objectives that meet their needs. Each of the camps in the Summer Camp series has been developed around these domains and meets the individual participant's needs for participation in a well rounded and fulfilling experience in physical education.

Moving to a Theme

Carol A. Ryan
Northern Kentucky University

Themes are a common part of early childhood education, in both special education and regular education classrooms. They help to focus a child's attention on a particular subject and to heighten his/her enthusiasm for it.

Many educational programs have adopted an integrated subject approach to their curriculum, which allows the student to use all of his/her sensory information to gain knowledge. Within early childhood education programs, movement is an important element of the curriculum. It develops psychomotor skills, a positive self-image, self-confidence, and contributes to the learning process.

The purpose of this session is to give participants ideas on using movement to increase student learning in various theme units. A slide show, portraying an inclusive program of children with special needs and typical development, is presented in addition to the lecture and handouts given to the audience. Participants will also be given the opportunity to engage in various theme activities.

Moving Themes

All About Me:
a. Hokey Pokey Dance
b. Parachute Play—Touch various body parts
c. Jump Rope—Use various body parts to interact with rope
d. Shadow Dance—Overhead projector, music
e. Dress Race—Put on "funny" clothing articles

International Day:
a. Limbo Dance
b. Rhythms—Put on music from various countries, let students play instruments to match rhythms
c. Scarf Dance—put on music from India, use scarves, and perform creative dances
d. Congo Line

Winter Fun Day:
a. Sledding
b. Ice Skating—Use cheese boxes for skates
c. Skiing—Use foam board for skis
d. Snow Bowling—Dress bowling pins as snowmen, use volleyball to knock them down
e. Snow Ball Fight—Make snowballs out of white paper, throw at each other behind forts

Winter Olympics:
a. Speed Skating—On roller skates, either on tile floor or on mats
b. Pairs Skating—On skates and paired with an adult partner
c. Luge—Ambulatory student pulls non-ambulatory student on a scooter board through a course
d. Cross-country Skiing—Shoe boxes on feet and ski through a course
e. Two Person Bobsled—Partners cooperatively move a round scooter board or moonwalker through a course
f. Two Man Luge—Ambulatory student sits in a large box on scooter board and holds a non-ambulatory student. Adult pulls them around a course.
g. Speed Skating—Non-ambulatory student sits in a mobile j-seat with shoe boxes on feet. Adult pulls him, or he pushes himself with own feet

Kite Flying:
a. Kite Day—Make own kites or use store bought ones, go outside and fly the kites

Spring Olympics:
a. Beginning March—Wave flags and march in to the Olympic theme song or "It's a Small World"
b. Relay Race—Do various locomotor activities a certain distance, then pass scarf to a teammate
c. Volleyball—Set up low volleyball net, pass beach volleyball back and forth over net
d. Javelin/Shot-put Throw—Use nerf balls and football with tail, throw as far as possible

e. Olympic Art—Draw with chalk on blacktop
f. Water Works—Squirt guns at target, throw water balloons at target or of course, each other!

Farm Day:
a. Farm Target—Throw bean bags, nerf balls, yarn balls at farm scene on wall
b. Fishing Hole—Fill plastic pool with water, put in plastic fish, use fishing poles to catch fish with magnets
c. Sack Race—Potato sack race
d. Story Time—Speech Dept. reads farm story, has students act out various movements and sounds from story
e. Animals—Volunteers from community brought in animals to form a petting zoo
f. Hayloft Jump—OT Dept. set up a jump and roll station, using bolsters, mats, and crash pads
g. Plowing—PT Dept. set up a plow station with students pulling each other on a large blanket
h. Hayride—Use own tractor/wagon or rent one from the community
i. Square Dance—Art and Music Dept. practiced and carried out 2-3 square dances in the gym

Misc:
a. Fireman Obstacle Course—Set up obstacle course, let students wear fireman hat as they climb ladders, go under, crawl through, etc.
b. Community Workers—Set up activities that correspond to the activities that a community worker does (e.g., mail carrier delivers the mail)
c. Teddy Bear—Race: Run distance and pick up teddy bear. Scooter: Push scooter boards alone or with partner, pick up teddy bear. Jump: Jump on small trampoline holding bear
d. Bus Safety—Tie scooter boards together to make bus, students do locomotor skills at various bus stops

Participation Activities

Dice Ball—Played like baseball/softball, except a dice is used for the ball. # 1-4 on dice equals single, double, etc. X = strike, O = ball.

Musical Spots—Place spots on the floor according to the theme (e.g., leaves, insects, animals, etc.) Each student starts on a spot; when the music plays, they move around the spots using different locomotor movements. When music stops, they quickly find a spot to stand on.

Butterfly Get—Two children hook arms together at the elbows, a third child tries to hook onto the butterfly at either end; when successful, the opposite end person becomes the new chaser.

Spider Web—Students are in a circle, one person calls another student's name and throws a ball of yarn at them, that person calls another name, throws the ball of yarn at them, etc., until all children are holding a piece of the spider web. Now students one at a time try to crawl through the various pieces of the spider web.

Apple Picking Tree—One student at a time climbs up the apple tree, picks an apple, brings it back to the group, and leads that activity.

International Dance—Follow dance directions on tape "Children of the World" from Kimbo Records.

Fitness Circuit—Use music appropriate to the theme, design a circuit with as many stations as you want, with activities appropriate to the theme. Make tape so the music lasts 30 seconds to one minute (according to the age level) and then no music for 15-30 seconds. Children do circuit while music plays, rotate when music stops.

Car Wash—Use the music "Car Wash." Set up car wash course and children move through it according to their own capability. Course: spray bottle, bubbles, sheet, big box, dryer, lotion.

Inclusion: Modifying Games and Sports Activities for Individuals with Disabilities

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George Mason University, Fairfax, Virginia

Introduction

Often, those working and teaching individuals with disabilities seem most concerned with, *"What can I do or how will I be able to work with them? They are so severely disabled!"* Yet, that may be the easiest part of the program. There are often so many other issues that occur, that it becomes very easy to get tunnel vision. It will be the intent of this presentation to get the participants to **think through the entire process of what is involved in the total life of disabled individuals from the first day you see them until they leave your program.** Besides learning how to develop activities that work (and some that won't—when they won't, never abandon an idea just because it does not work now; it may work later when the appropriate situation arises), we will be considering other critical aspects involved in the TOTAL LIFE of challenged individuals to help them become self-sufficient.

This presentation is designed so that you can take it with you and do it in your district, agency or facility. You can do it with co-workers, parents, children, young people, and others.

Myth of Adapted Physical Education Curriculum

A number of years ago Dr. Julian Stein spoke to this issue (1989). He made it very clear that all good and appropriate physical education, regardless of level of students, is adapted, developmental, individualized and personalized. The regular physical education teacher is as able to develop programs for special needs individuals through good teaching behavior as the adapted specialist. This leads to the question, what is good teaching behavior?

Good Teaching Behavior. Good teaching behavior analyzes student needs and develops activities appropriate to meet those needs. The problem comes in how well one plans, organizes, and carries out the unit/lesson plans for and interacts with those students.

What Dr. Stein said a number of years ago really makes sense. He said, *"Difficult as it is to accept, none of us ever taught anyone anything."* Our job is to provide the right environment (motivation, resource, and assistance) for learning to take place. However, that does not make the teacher's role less important and less difficult; in fact, it makes it more important and more difficult.

Modifying Activities

Principles of Practice. At this point, we will not be establishing all the different ways one can modify such activities as basketball, field hockey, and soccer. We need to be concerned with *principles of practice* as opposed to specific adjustments to activities.

All that will be done here is to go through the process of good teaching. Obviously, all the answers to good teaching will not be presented here; however, the main aspects will be considered.

Think. There are several steps to take when modifying activities. The first and most important step is to **think**! The first thought, then, should be to determine what that challenged individual **can do**. John Wooden, renowned former basketball coach at U.C.L.A., has said that we should not let what one can't do interfere with what one can do. You don't need special assessment tools; you only need to place the individual into a number of activities that are currently being taught in your school or agency and make your evaluation from that.

Appropriate Level of Instruction. The next step is to determine the most *appropriate level of instruction.* Our major concern is how the students' conditions affects ability to learn and perform physical and motor acts. The question to ask is, What are the easiest and simplest modifications that need to be made, if any, to accommodate for the disabilities of the students so that the entire class can participate at the appropriate level of play for the activity and skill level? The simplest change might to be to adjust the rules or the field of play. Remember, if the non-disabled individuals are unable to play the activity at an appropriate level of skill for their age and ability as designed by you, no matter what adaptations are made, then the **challenged students are in an inappropriate environment.**

Help from Special Individuals. If you are one who has difficulty being creative/innovative, then, at this point in the process, it's time to ask for help. One of your best sources is the special individuals themselves. (This also includes adults and others with disabilities as well!) Often, those individuals who are disabled can tell you what might work and what might not. The next source is the other students in class. Don't be afraid to ask them. Some of the best suggestions for assistance in adapting activities have come from the special students and/or the rest of the students in class.

Modifying Equipment. In some cases, it may mean modifying equipment. If you have a decent budget, you can buy equipment; however, most budgets are meager. As a result, you have to find other ways to adjust equipment. Usually, if you have an idea, there is someone who can make the modification. Maybe there is someone in the PTA, a specific disability-related group/organization, a parent, another teacher or someone in a local service organization that can help. A few phone calls will usually do it.

You may even decide to have a "building" field day with your students after school. You might get a number of different pieces of older equipment along with "patching/building materials" such as masking tape, styrofoam, dowels of various sizes, old bicycle tire inner tubes, and old bicycle tires.

Now, you begin building modified equipment based on the needs of the different students in your school that will need it.

Keep in mind that the *best equipment* is that which is tailored to the individual, whether made or modified. The differences in disabilities are usually so great and the need so small that it doesn't make sense for a company to mass produce them; hence, you will find few of these in catalogues.

Teaching Methods in Modifying Activities
(Stein, 1989)

None of these is new, but we often have to hear/see them again in order to remember. In fact, it has been said by marketing experts ten years ago that a product has to be presented approximately five times (today, it has been reported eight times) in order to get someone to purchase it. Well, maybe you will hear/see something here for the fifth/eighth time and it finally rings a bell.

All of us have used them; however, we may not have been as "methodical" in applying them as we should.

- **Good Interpersonal Relations**—be patient and kind, but not condescending.
- **Take Your Time, Do It Well**—results are always more productive when something is done well.
- **Be Direct/Concrete**—the individual should not have to guess at what is to be done.
- **Student-developed Objectives & Goals**—let the individual know they helped design these.
- **Focus on the Process, Not the Product**—this is something they will have to do throughout their lifetime.
- **Evaluate the Activity and Total Life Pattern** —how does what I am doing improve the *total functioning* of the individual.

Special Issues That Are Not Often Considered

At this point, it is important to note that when modifying activities as discussed, we often think of all the different things we can do and ways of adapting activities so the student can be successful. However, it is real easy to lose sight of many other things that are involved in the **total life of the individuals**. What are these? What will follow is no more than the start of a list to which you can add as needed, some of which you may consider until you begin working with and teaching special individuals. For those of you who are required to complete an IEP, this is particularly true with the *"... transition requirements by age 16 ..."* This doesn't mean they can't be introduced at earlier ages, in fact, the earlier the better! These questions are in no special order.

1. What needs to be included throughout the year?
2. How will you start?
3. ESL and other communication accommodations?
4. For the student to ask, *"How can I challenge myself in gymnastics when I can't ...?"*
5. How do I direct students when they can't be involved in the activity?
6. How can the student be included into a group? On a relay team? In a team sport?
7. How do we teach the special needs student to learn to make accommodations, something they will need to learn throughout their life? What principles do we give them to use? When does this start?
8. Where are you going or what is the end result of your interaction with this student?
9. What is my responsibility in this situation?
10. What are the parent's responsibilities?
11. Is the gym a safe place to experiment?
12. If you have been assigned a farther-out field, can you get closer?

General Activities During the Presentation

We will be in several groups of 5-7 participants. Each group will present one or more current adapted issues/concerns. The groups will then come up with a plan/suggestions for working through the problem. It will then be placed on a diskette, from which a master diskette of all the groups will be made. Then as many master diskettes as necessary will be duplicated that will have all the groups' cases and recommendations so that all participants may take this back to their home district or agency and improve/use it in any way that will assist the quality of instruction, participation, and life of special needs students.

Selected References

Stein, J. (1989) "The Myth of the Adapted Physical Education Curriculum," presented at the *A Total Commitment Conference*, North Carolina A & T University, Greensboro, North Carolina, March 7-9.

Try-umph—Promoting Sport, Fitness, and Recreation for Youth with Physical Disabilities

Barbara Anthony
Bloorview MacMillan Centre, Toronto, Canada

Overview: "Try-Umph!" will focus on the promotion of Sport, Fitness, and Recreation for children with physical disabilities. The ability of young people to discover and develop their leisure interests and skills is largely dependent on the relationships built between family, friends, schools, professionals and the community. Successful interaction can create opportunities for meaningful participation and a synergy for active, healthy living.

Objectives:

1. To explore the dynamics and motivating factors for increased participation.
2. To identify and discuss the elements of "PRO-MOTION."
3. To provide exciting examples of creative resources and information related to workshop topic.

Trouble or Triumph: Novel Falls Prevention Strategies for Older Adults with Disability

Mark Alexander Hirsch, Johns Hopkins University School of Medicine

Purpose

The purpose of this presentation will be to discuss strategies for developing fitness programs for older adults with neuromuscular disability. The following areas will be addressed in the presentations: sensory impairments and falls in older adults, effect of habitual exercise on functional mobility in older adults, and development of balance and strength training programs. Despite a growing body of research that shows an increased level of physical activity is correlated with greater independence in daily activities and substantially reduced risk of disability, only 8% of all adult Americans fulfill the American College of Sports Medicine recommended norms of exercise for developing and maintaining cardiorespiratory and muscular fitness. With such a small percentage of adults participating in exercise programs, one can only imagine how small the sample must be of older adults with neuromuscular disability that are included in this 8%. The need for fitness programming for this population is obvious. Therefore, it is the goal of this presentation to facilitate the development and implementation of fitness programming for older adults with neuromuscular disability, and in the process, attempt to achieve the following learning objectives:

1. To educate the audience as to the importance of fitness programming for older adults with sensory impairments and neuromuscular disability.
2. To present strategies for providing safe and successful participation for persons suffering from Parkinson's disease and various levels of impairment.
3. By reporting the results of studies undertaken by the presenter, demonstrate the results of fitness program participation for a selected sample of older adults with Parkinson's disease, and discuss the inherent benefits that may be derived from such participation.
4. Discuss innovative falls prevention programs currently being developed at Johns Hopkins University School of Medicine.

And...

5. Conduct a question/answer exchange that will allow for discussion between the presenter and audience, as well as amongst individuals in the audience with related experience, that will advance further the body of knowledge in this area.

Background

Falling is a major risk factor leading to secondary disability. Each year, 30% of the population of age 65 and over experience one or more falls. Falls are the second most common source of accidental death for healthy older adults 55 to 79. For the 80 year and older cohort, 40% fall at least once a year and falling is the primary cause of accidental death. Half of older adults who fall, do so repeatedly. Falls account for 280,000 hip fractures annually. Following a hip fracture, 50% of persons require help with daily activities, 15-20% are institutionalized and 15-20% die. The health care costs attributed to fracture rehabilitation exceed $10 billion annually. Women are more likely to fall than men and more likely to sustain a hip fracture that requires hospitalization. The fastest growing segment of our population is comprised of older women. Women outnumber older men by 3:2, but for women over 84 years that ratio is 5:2. Indeed, women over 84 years represent the fastest growing cohort in the United States today. We can expect to see an increase in the number of disabled older adults, especially disabled older women. Since women are more likely to fall than men, exercise programs should especially focus on their unique needs.

The prevention of falls through strength and balance exercise programs and educational programs is a primary concern. Falls have been attributed to dysfunctional sensory systems, lack of strength, dementia, improper use of medication, and environmental hazards. Older adults with neurological impairment which affects the motor control of balance and gait, such as Parkinson's disease, are especially at risk to fall, as are persons with stroke or dementia. Exercise seems to be equally important in late life as it is during the early development of persons and can prevent falls in adults with and without neurological deficits. Persons prone to fall can benefit from short bouts of exercise training. With that notion comes the responsibility to intervene in persons with so called "chronic" disorders and to begin to redefine chronic disorders and challenge ourselves to find new strategies to overcome disease induced changes in the body.

A number of studies in older adults free of pathology have found that postural instability and an increased tendency to sway result from decreased ankle, quadriceps and hamstring strength (Lord et al., 1991; Whipple et al., 1987). Recently, others have maintained that rehabilitation approaches combining strength and balance training could be useful to improve balance in older adults (Buchner et al., 1993; Wolfson et al., 1993). In spite of considerable evidence that training can improve balance in older adults (Fiatarone et al., 1990; Hu & Woolacott, 1994; Shumway-Cook & Horak, 1990; Smith-Wheelock et al., 1991), studies have not yet sufficiently examined the effects of strength and balance training on the ability to control balance and increase muscular strength in persons with disability, especially Parkinson's disease. Evidence points toward an increase in falls and fall related injuries in persons living with Parkinson's disease (Eventov et al., 1983; Johnell et al., 1992; Koller et al., 1989), and unusually high percentages of complications and increased mortality rates following hospitalization for an injury sustained during a fall. Can falls in Parkinson's disease be prevented through physical training? Physical therapy can ameliorate many functional aspects of Parkinson's disease by improving motor control and reducing unwanted movements (Comella et al., 1994; Gibberd et al., 1981; Homberg, 1993; Murray, 1956; Palmer et al., 1986; Wroe & Greer, 1973). Strength and balance exercises have not been combined to improve function in persons living with Parkinson's disease, and only recently (Glendinning & Enoka, 1994) has the idea surfaced that persons with Parkinson's disease could benefit from strength training.

There is evidence of an association between muscular weakness and Parkinson's disease, suggesting that persons so afflicted could benefit from strength training. Koller and Kase (1986) found significantly lower knee extension and knee flexion torque values in patients with early stage Parkinson's disease compared to age-matched healthy controls. Maximal isotonic muscle strength was significantly decreased at the wrist, upper extremity and the knee, with no difference in strength reported between the more affected side and the less affected side in persons living with Parkinson's disease. They conclude that "muscle weakness appears to be an elementary symptom of Parkinson's disease" (Koller and Kase, 1986; p. 133).

Yanagawa et al. (1990) report reduced voluntary evoked dorsiflexion muscle torque in persons with Parkinson's disease in relation to age-matched healthy controls. In contrast, Saltin and Landin (1975) report persons with Parkinson's disease and age-matched controls to have similar isometric knee and ankle strength torque values. Regardless of whether there is a link between Parkinson's disease and muscle weakness, strength training is beneficial to persons with Parkinson's disease as it is to healthy older individuals.

Preliminary Studies

Several preliminary experiments have been conducted. Using forceplate posturography and muscle strength measures, we have shown that postural control of persons with Parkinsonism can be strongly predicted by peak torque of inversion of the ankle, percent peak torque of knee flexion relative to that of knee extension, and use of an ankle strategy for posture control (Toole et al., 1996). Persons with Parkinson's disease fall when proprioceptive information is unreliable, and visual input is absent (Toole et al.,1993). Group strength and balance training improves postural control in those with Parkinson's disease who fall (Toole et al., 1997).

Finally, balance training alone and strength and balance training combined substantially reduce postural disequilibrium and falls in persons with Parkinson's disease. When training is interrupted by 4 weeks of inactivity, reduction of falls is still pronounced in strength and balance trained subjects while subjects trained only with balance training continue to fall (Hirsch, unpublished doctoral dissertation).

Few studies, to date, have examined the longevity of behavioral changes. Can lasting behavioral changes be ignited if physical activity patterns are interrupted? Although physical therapy is enthusiastically prescribed in the older population, there is little evidence from well controlled studies that it enhances functional mobility, reduces falls, or that training effects can be sustained beyond the time frame of intervention.

Literature Cited

Buchner, D. M., Cress, M. E., Wagner, E. H., de Lateur, B. J., Price, R., & Abrass, I. B. (1993). The Seattle FICSIT/MoveIt study: The effect of exercise on gait and balance in older adults. Journal of the American Geriatrics Society, 41, 321-325.

Comella, C. L., Stebbins, G. T., Brown-Toms, N., & Goetz, C. G. (1994). Physical therapy and Parkinson's disease: A controlled clinical trial. Neurology, 44, 376-378.

Eventov, I., Moreno, M., Geller, E., Tardiman, R., & Salama, R. (1983). Hip fractures in patients with Parkinson's syndrome. The Journal of Trauma, 23, 98-101.

Fiatarone, M. A., Marks, E. C., Ryan, N. D., Lipsitz, L. A., & Evans, W. J. (1990). High intensity strength training in nonagenarians: Effects on skeletal muscle. Journal of the American Medical Association, 263, 3029-3034.

Gibberd, F. B., Page, N. G. R., Spencer, K. M., Kinnear, E., & Hawksworth, J. B. (1981). Controlled trial of physiotherapy and occupational therapy for Parkinson's disease. British Medical Journal, 282, 1196.

Glendinning, D. S., & Enoka, R. M. (1994). Motor unit behavior in Parkinson's disease. Journal of Physical Therapy, 74, 61-70.

Hirsch, M. A. (1997). Activity-dependent enhancement of balance in persons with Parkinson's disease. Unpublished doctoral dissertation, Florida State University, Tallahassee.

Homberg, V. (1993). Motor training in the therapy of Parkinson's disease. Neurology, 43 (Supplement 6), S45-S46.

Hu, M. H., & Woolacott, M. H. (1994). Multisensory training of standing balance in older adults: I. postural stability and one-leg stance balance. Journal of Gerontology, 49, M52-M61.

Johnell, O., Melton, L. J., Atkinson, E. J., O'Fallon, W. M., & Kurland, L. T. (1992). Fracture risk in patients with Parkinsonism: A population based study in Olmsted County, Minnesota. Age and Aging, 21, 32-38.

Koller, W. C., Glatt, S., Vetere-Overfield, B., & Hassanein, R. (1989). Falls and Parkinson's disease. Clinical Neuropharmacology, 12, 98-105.

Koller, W., & Kase, S. (1986). Muscle strength testing in Parkinson's disease. European Journal of Neurology, 25, 130-133.

Lord, S. R., Clark, R. D., & Webster, I. W. (1991). Postural stability and associated physiological factors in a population of aged persons. Journal of Gerontology, 46, M69-M76.

Murray, W. (1956). Parkinson's disease: Aspects of functional training. The Physical Therapy Review, 36, 587-594.

Palmer, S. S., Mortimer, J. A., Webster, D. D., & Bistevins, R. (1986). Exercise therapy for Parkinson's disease. Archives of Physical Medicine and Rehabilitation, 67, 741-745.

Saltin, B., & Landin, S. (1975). Work capacity, muscle strength, and sdh activity in both legs of hemiparetic and patients with Parkinson's disease. Scandinavian Journal of Clinical Laboratory Investigation, 35, 531-538.

Shumway-Cook, A., & Horak, F. B. (1990). Rehabilitation for patients with vestibular deficits. Neurology Clinics, 8, 441-457.

Smith-Wheelock, M., Shepard, N. T., & Telian, S. A. (1991). Physical therapy program for vestibular rehabilitation. The American Journal of Otology, 12, 218-225.

Toole, T., Park, S., Hirsch, M., Lehman, D. & Maitland, G. (1996). The multicomponent nature of equilibrium in persons with Parkinson's disease: a regression approach. Journal of Neural Transmission, 103, 561-580.

Toole, T., Hirsch, M., Lehman, D., Park, S., & Maitland, G. (1993). Visual and Proprioceptive Postural Control in Persons with Parkinson's Disease. Neurology Report, 17(4), 26.

Toole, T., Hirsch, M., & Maitland, G. (1997). A Sensory Integration and Strength Training Program for People with Parkinson's Disease. Manuscript submitted for publication.

Whipple, R. H., Wolfson, L. I., & Amerman, P. H. (1987). The relationship of knee and ankle weakness to falls in nursing home residents. Journal of the American Geriatric Society, 35, 13-20.

Wolfson, L., Whipple, R., Judge, J., Amerman, P., Derby, C., & King, M. (1993). Training balance and strength in the elderly to improve function. Journal of the American Geriatrics Society, 41, 341-343.

Wroe, M., & Greer, M. (1973). Parkinson's disease and physical therapy management. Journal of Physical Therapy, 53, 849-855.

Yanagawa, S., Shindo, M., & Yanagisawa, N. (1990). Muscular weakness in Parkinson's disease. Advances in Neurology Vol. 53: In M. B. Streifler, A. D. Korczyn, E. Melamed, M. B. H. Youdim (Eds.) Parkinson's Disease: Anatomy, Pathology, and Therapy, 259-269.

Liability Concerns for Working with Individuals with Disabilities

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Introduction

The legislation and laws of the 1970s led to the establishment of adapted physical education and therapeutic recreation for a wide variety of individuals with disabilities. P.L.94-142 & Section 504 of the Rehabilitation Act provided this impetus which resulted in excellent programs in public schools, recreation departments and the greater local communities. In addition to quality programs we saw the development of special training programs and credentialing for individuals who were to operate these programs for individuals with disabilities. However, the primary focus was the development of quality programs for individuals with disabilities, and most were in segregated settings. The 1990s saw the reaffirmation of the rights of individuals with disabilities to have special programs but also the right to be integrated into programs with non-disabled individuals. The reauthorization of IDEA (Individuals with Disabilities Act) and ADA (Americans with Disabilities Act) stimulated a stronger push from some professionals in special education and adapted physical education for inclusion in regular education classes. While for many this prospect was indeed the least restrictive environment, for others it was not. This push for "Full Inclusion" has caused controversy in both the academic environment as well as the gymnasium. This presentation will take a look at the liability parameters that should be considered carefully prior to the placement of individuals with disabilities in any physical activity setting. The premise of this presentation is that any placement should be predicated on the placement being safe for both the non-disabled and the disabled as well as providing an environment that all the individuals can be successful in and a program that is appropriate to the abilities of individuals concerned.

Terminology

In order to discuss this topic it is critical to first discuss the pertinent terminology, so we all start with the same basis of information. In its simplest form how do we decide where to place individuals with disabilities for physical activity? The basic parameters are placing them in an environment that is safe, where they can be successful and where the setting is as close to a normal setting as possible. This is indeed called the "least restricted environment." Many individuals differ with this position and prefer either "mainstreaming" or "inclusion." Mainstreaming is an old concept originated by Maynard Reynolds in 1962, which basically is the placement of individuals in the general education setting or general physical education setting if that can be completed safely and with a good chance for success. While this concept has been around over 30 years, it has not been in actual practice for that long. When it has been in existence, it was on a limited basis. The past 10 years have seen this concept become a reality in many settings across the country. One note of interest is that it seems to be just as prevalent in states and localities that have trained specialists as in areas with no specialists. On the other hand, inclusion or full inclusion is the placement of individuals with disabilities in regular classes with no criteria. Most inclusionists believe that it is the right of the individual with a disability to be with his/her peers. This is to this presenter a philosophical position that is hard to argue with. Yet, as a professional in the field I don't accept this concept in practice. We must live in the real world. That is why I believe in "least restrictive environment" which allows for integration of individuals with disabilities in general physical activity programs that are safe for all and where there is a reasonable chance for success. These three different approaches to including individuals with disabilities in the general physical education setting are the basis for this presentation.

Criteria for Placement Decisions

The second area that needs to be discussed is what is successful. While I suspect that most professionals can agree on what is a safe environment, I believe that the discussion of successful is another matter. There are many factors that must be considered when determining the chances of success in any type of placement. The following areas need to be considered:

- **Fitness level**
- **Motor abilities/skills**
- **Age**
- **Behavior**
- **Psychological benefits**
- **Social interaction**
- **Receptive & expressive language**
- **Educational/vocational goals**

It is indeed possible for individuals with low fitness and below average motor skills to be placed in a general physical education class for social reasons. On the other hand an individual with a behavioral disorder with excellent fitness and good motor skills might be placed in a segregated setting due to their unacceptable behavior in a group setting. The common thread that we all need to be cognizant of is the educational and legal implications of the placement. As professionals, each of us needs to understand that in the real word there is a difference between philosophy and practice. The factor which dictates that is the safety and liability considerations.

Liability Issues

While this speaker is not a lawyer (thankfully), he is well versed and experienced in dealing with liability issues in physical activity, recreation and sport programs for both non-disabled and disabled individuals. The presenter has class work in school law, experience in general physical education, adapted physical education, sports, recreational programs, rehabilitation programs and institutional settings. In addition he has been an expert witness in dozens of cases involving physical activity injuries across the different settings listed. The following terminology basic to tort liability needs to be understood as an additional factor in the placeme.it process:

Terms:

- **Tort**
- **Negligence**
- **Proximate Cause**
- **Contributory Negligence**
- **Sudden Emergency**

In addition to the basic tenets of tort liability in the area of physical activity there have been identified common areas of negligence of concrn to the instructor. These include:

- **Failure to Take Protective Action**
- **Inadequate Supervision**
- **Poor Selection of Activities**
- **Qualifications of the Instructor**

Failure to take protective action includes preventative action such as the utilization of advised consent and medical forms and other safety issues. In regards to inadequate supervision are issues directly related to the placement of individuals with disabilities in a general physical education class such as number of total students in the class, ratio of non-disabled to disabled and staff to student ratio. In the area of the selection of appropriate activities for the class the age, severity of the disability and the type of activity being taught are all critical to the operation of a safe class. Finally we need to address the qualifications of the instructor. When individuals with disabilities are in adapted physical education settings, the instructor usually has special training as part of his/her education prior to working with individuals with disabilities. If we integrate students with disabilities in the general physical education class, what are the competencies of that physical education instructor? Have they had any education (course work) in the area? Have they had any inservice or consulted/ collaborated with an adapted physical education specialist? These are all issues that are important. What makes this instructor capable of teaching this class with these students?

Summary of Factors to Consider

- Safety of the participants
- Success for the individual with a disability
- Appropriateness of the program/activities
- Students outcomes desired
- Needs of the students: non-disabled & disabled
- Class size
- Supervision
- Teacher competence

Summary

The ultimate goal for professionals who work with individuals with disabilities in physical education, recreation and sport is to provide an appropriate program that the individual can participate in safely and with a reasonable chance of success. The goals of programs are different for each individual. Some may wish to keep fit and healthy, others may desire to maintain their independence, while others may wish to just enjoy exercise and the social interaction that takes place with it. The important thing is we need to assist each individual to reach his/her goal and to instill in each the need for regular physical activity. It can allow them all to maximize their physical abilities while maintaining an active and healthy lifestyle.

Selected References

Aufsesser, Peter M. (1981), "Adapted Physical Education Perspectives: A Look Ahead," Journal of Health, Physical Education, Recreation, 54:4.

Aufsesser, Peter M. (1986), "Liability and the Handicapped" Proceedings, National Physical Activity for Exceptional Individual Conference, Woodland Hills, CA.

Aufsesser, Peter M. (1991) "Mainstreaming & Least Restrictive Environment: How Are They Different?" Palestra: Forum for Sport & Physical Activity for the Disabled, 7:2.

Aufsesser, Peter M. (1993), "Liability & the Disabled: How to Protect the Student & Yourself," Proceedings, National Conference on Physical Activity and the Exceptional Individual, Oakland, CA.

Pain Free Exercise Training for People with Peripheral Vascular Disease?

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Intermittent claudication (IC) is the primary complaint of patients with peripheral vascular disease (PVD) (Hertzer, 1991). It is defined as pain in the muscles of the buttocks or legs during walking which subsides with rest and results from inadequate blood supply due to arterial spasms, atherosclerosis, arteriosclerosis, or an occlusion (Hirsch & Munnings, 1993; Thomas, 1989). Approximately 53 per 10,000 males aged 55 to 64 years are at risk for this condition; females are at slightly less risk (Hertzer, 1991). Approximately 25 percent of IC patients develop limb threatening ischemia within four to seven years after the diagnosis of PVD (Hertzer, 1991).

Drug therapy for PVD (vasodilators, anticoagulants, antiplatelet agents, rheologic agents, thrombolytic therapy) is of limited value. Invasive approaches, such as percutaneous transluminal angioplasty and bypass surgery, have good success rates, but recurrence of the disease is common and usually occurs within five years (Lundgren, Dahllof & Schertsten, 1989). Also, surgery is frequently contraindicated because of small vessel disease, age, lifestyle, and other health related problems. Limb amputation is reserved as the last resort.

Exercise therapy has been used as a noninvasive treatment for improving the functional capacity of PVD patients. The mechanism for improvement in physical capacity from exercise therapy is controversial and requires further investigation since significant blood flow changes have not been demonstrated. One possible explanation involves improvements in the oxidative capacity of the muscle tissue (Hirsch & Munnings; Lundgren et al., 1989; Sorlie & Myer, 1978; Radack & Wyderski, 1990). Nearly all exercise programs for IC patients have been anaerobic in nature. That is, high intensity intermittent training sessions where the patients are instructed to exercise to maximal claudication pain tolerance, rest until pain subsides, then resume exercise (Lundgren et al., 1989; Sorlie & Myer, 1978; Clifford, Davies & Hayne, et al., 1980; Dahllof, Holm & Schertsten, et al., 1976; Ekroth, Dahloff & Gundevall, 1978; Hiatt, Regensteiner & Hargarten, et al., 1990; Jonason, Jonzon & Rinqvist, et al., 1979; Mannarino, Pasqualini, & Menna, et al., 1989). Other than obvious health risks, the major disadvantage of training to pain tolerance is poor adherence to the exercise program.

The purpose of the present study was to investigate the viability of a continuous, low intensity, pain free, training program for persons with intermittent claudication. Potential benefits of training without claudication pain include (1) de-emphasizing anaerobic metabolism (i.e., anaerobic glycolysis, which results in lactate production which may be the cause of the claudication pain), (2) increasing the relative contribution of aerobic metabolism to elicit an endurance training effect, and (3) facilitating persons with IC to incorporate exercise into their lifestyle. (Hirsch & Munnings, 1993; Boyd, Bird, Teates, et al., 1984).

Methods

Subjects

Forty consenting patients were studied; 31 males and 19 females. Their ages ranged from 46-82 years (mean age = 67.9). All had a history of vascular intermittent claudication and were referred to the study by area physicians. Ankle-brachial pressure ratios (ABIs) were 0.8 or below. Smoking habits were not altered during the time of the study.

Training Program

The training program lasted for an average of 9 weeks and consisted of individually prescribed, submaximal, endurance exercise on a motor-driven treadmill. Elevation was set and remained constant at 0% grade for the entire training program. Subjects were instructed to use the handrails during treadmill exercise for balance only. Fifteen subjects exercised three times per week, and 25 exercised two times per week. All subjects exercised for 40-50 minutes at a walking rate which was just below the threshold which elicited claudication pain. The exercise sessions included a 10-15 minute warm up consisting of stretching exercises and light calisthenics to assist with overall conditioning and injury prevention. Sustained and proprioceptive neuromuscular facilitation (PNF) stretching were used to the exclusion of ballistic stretching exercises.

Statistical Treatment

Data collection for the treadmill exercise included total miles walked, duration of walking, walking speed (mph), and pre- and post-exercise heart rates. Means and standard deviations were calculated for miles walked, walking speed and duration of walking exercise before and after training. The influence of training on these variables was then evaluated using a one-way analysis of variance for repeated measures. A 0.05 level of significance was used for statistical analysis.

Results

All 40 subjects improved in pain free duration, speed, and total distance walked (see Table 1). The mean pre-training scores for these variables were 19.2 minutes, 1.15 mph and .40 miles, respectively. The mean post-training scores for duration, speed and distance walked were 46.9 minutes, 1.91 mph and 1.61 miles. These means were statistically different from each other at the 0.05 level ($p=0.000001$).

In addition to group means, each individual subject's percent increase in distance, speed and duration was calculated and averaged across the 40 participants. The average improvement in speed and duration were 98% and 169%, respectively. The average percent improvement in distance was 402%. The average improvement in pain free distance walked represents an average of over one mile per person.

Table 1
Summary of Results for the NineWeek Low Intensity Training Program

	Mean Pre	Mean Post	p value (pre vs post)
Duration (min)	19.2 ± 6.5	46.9 ± 8.7	0.000001
Speed (mph)	1.15 ± .46	1.91 ± .76	0.000001
Distance (miles)	0.40 ± .26	1.61 ± .61	0.000001

Information was available on the adherence rate for 22 of the participants; their adherence to the exercise program (attendance rate) was 90.2% (ranging from 71% to 100%). With the exception of two subjects who had to end the program early due to unrelated medical complications, the attrition rate was 0%.

Discussion

The subjects responded well to the 9 week, submaximal training program and showed significant improvement in all exercise variables (Table 1). Although 9 weeks is a relatively brief training period, the improvement in functional performance observed is as great or greater than improvements reported for high intensity, painful exercise programs of longer duration (Gardner & Poehlman, 1995; Kent-Braun, McCully & Chance, 1990; Williams, Ekers & Collins, et al., 1991). Boyd et al. (1984) reported significant improvements in exercise performance following 12 weeks of pain free endurance training in persons with IC. The findings of the present study, along with those of Boyd et al. (1984), indicate that low intensity, pain free walking exercise elicits improvements in physical performance after only 9-12 weeks of training, similar to 3-6 month studies requiring exercise to pain tolerance (Gardner & Poehlman, 1995; Clifford et al., 1980; Dahllof et al., 1976; Ekroth et al., 1978; Jonason et al., 1979; Sorlie & Myer, 1978).

Although the changes observed in the present study represent impressive improvements in functional capacity, we believe the magnitude of these improvements are conservative for two reasons. First, the patients with the lowest relative improvement (eg., 74% in distance) were already walking independently at home, albeit with significant pain, before the study began. These subjects were therefore already somewhat trained. Second, and most important, is that all subjects on their very first day of the

program were expressly told to walk as slowly as needed to remain pain free. They were carefully monitored and coached to walk at a pain free pace. Therefore, their initial walking distances and durations were greater than most had experienced in recent years.

All subjects in this study were given the opportunity to participate in exercise training. As a result, we did not have a control group that did not train. While this is not the ideal experimental design, we feel that it is not a major limitation. Clearly, the increases observed in this study were due to exercise training. Walking speeds were found to increase with each successive exercise bout so that after a few visits the subjects were surpassing their former painful walking speeds. One would not expect to see any meaningful change over 10 weeks in a control group. In addition, a control group would likely deteriorate in performance over a longer time.

The improvements found in this study represent a response to a pain free level of training. The more common exercise training regimen for IC patients requires them to exercise to pain tolerance, usually maximal pain tolerance, rest until pain subsides, then resume exercise (Gardner & Poehlman, 1995; Carter, Hamel, Paterson, et al., 1989; Barnard & Hall, 1989; Jones, Moore & Skinner, et al., 1991). One critical disadvantage to this method of training is a reduced compliance to the exercise program. Indeed, patient attrition has been reported as a source of frustration for others (Gardner & Poehlman, 1995; Gardner, 1993; Jones et al., 1991). Furthermore, due to other medical conditions which often accompany PVD (coronary artery disease, diabetes, chronic obstructive pulmonary disease) the increased intensity level required to exercise to pain tolerance may be contraindicated (Raydack & Wyderski, 1990).

Exercising at levels below the claudication pain threshold has at least two important positive effects on exercise training. First, submaximal exercise de-emphasizes the relative contribution of the anaerobic energy system (glycolysis) which may trigger claudication pain via production of lactate (Marburger, 1992; Winder, 1979). Therefore, low intensity (LI) exercise increases the length of the exercise bout. Submaximal aerobic exercise specifically trains the aerobic energy systems which are associated with oxidative, pain free activity (Hirsch & Munnings, 1993; Sorlie & Myer, 1978; Winder, 1979; Edgerton & Barnard, 1970; Saltin & Rowell, 1989). Secondly, the motivational advantage of pain free training is clear and may explain the high compliance rate in our patient population.

The mechanism responsible for the observed therapeutic response to pain-free exercise training is not known. Recently, investigators have suggested an improvement in the efficiency of the working skeletal muscle (Hirsch & Munnings, Boyd et al., 1984, Marburger, 1992; Winder, 1979; Saltin & Rowell, 1989). Based on what is known about endurance exercise training in healthy populations, potential mechanisms could be: (1) an increase in tissue capillarity, i.e., collateralization in response to ischemia, (2) an increase in mitochondrial quantity, quality, and size resulting in (3) an increase in oxidative enzymes, and (4) a de-emphasis, or a decreased dependency, of anaerobic glycolysis, resulting in an enhancement of the overall aerobic metabolic efficiency. Further research is required to elucidate potential mechanisms responsible for improved functional capacity following exercise training in patients with IC.

Conclusion

The patients with PVD participating in this study dramatically improved their functional capacity. They demonstrated an ability to walk farther, faster, and longer without pain following low intensity, pain free exercise training. The importance of this improvement is reflected in the potential for PVD patients to increase their range of activities, thus decreasing their degree of disability and improving their quality of life. Therefore, low intensity, pain free exercise training is an effective therapeutic alternative for individuals suffering from PVD. It is important that this safe, easy, motivating, and highly effective treatment modality becomes known and widely implemented so that people with intermittent claudication will have a chance to benefit. For some this may represent a chance at a functional and rewarding life of "ability" vs. pain and "disability."

References

Barnard, R.J. & Hall, J.A. (1989). Patients with peripheral vascular disease. *Exercise and Modern Medicine*, Baltimore: William & Wilkins, 181-196.

Boyd, C.E., Bird, P.J., Teates, C.D., Wellons, H.A., MacDougall, M.A., & Wolfe, L.A. (1984). Pain free physical training in intermittent claudication. *The Journal of Sports Medicine and Physical Fitness, 24*(2), 112-122.

Carter, S.A., Hamel, E.R., Paterson, J.M., Snow, C.J., & Mymin, D. (1989). Walking ability and ankle systolic pressures: Observation in patients with intermittent claudication in a short-term walking exercise program. *Journal of Vascular Surgery*, 10(6), 642-649.

Clifford, P.C., Davies, P.W., Hayne, J.A., & Baird, R.N. (1980). Intermittent claudication—is a supervised exercise class worthwhile? *British Medical Journal, 280* (6230), 1503-1505.

Dahllof, A.G., Holm, J., Schersten, T., & Silvertsson, R. (1976). Peripheral arterial insufficiency—effect of physical training on walking tolerance, calf blood flow, and blood flow resistance. *Scandinavian J. of Rebabilitation Medicine, 8*, 19-26.

Edgerton, V.R., & Barnard, R.J. (1970). Capillarity of red, white, and intermediate muscle fibers in trained and untrained guinea-pigs. *Experientia, 26*, 1222-1223.

Ekroth, R., Dahllof, A.G., Gundevall, B., Holm, J., & Schersten, T. (1978). Physical training of patients with intermittent claudication—Indications, methods and results. *Surgery, 84*(5), 640-643.

Gardner, A.W. (1993). Dissipation of claudication pain walking: Implications for endurance training. *Med. Sci. Sports Exerc., 25*(8), 904-910.

Hertzer, N.R. (1991). The natural history of peripheral vascular disease: Implications for its management. *Circulation, 83* (2suppl), 112-119.

Hiatt, W.R., Regensteiner, J.G., Hargarten, M.E., Wolfel, E.E., & Brass, E.P. (1990). Benefit of exercise conditioning for patients with peripheral arterial disease. *Circulation, 81*, 602-609.

Hirsch, A.T. & Munnings, F. (1993). Intermittent claudication steps for evaluation and management. *Physician and Sports Medicine, 21*(6), 125-138.

Jonason, T., Jonzon, B., Rinqvist, I., & Oman-Rydberg, A. (1979). Effect of physical training on different categories of patients with intermittent claudication. *Acta Medica Scandinavia, 206*(4), 253-258.

Jones, P.P., Moore, F.F., Skinner, J.S., Smith, L.K., & Bryant, C.X. (1991). *Stair climbing and treadmill exercise training in patients with peripheral vascular disease*, Kirkland, WA: Randall Sports/Medical Products, Inc.

Kent-Braun, J.A., McCully, K.K., & Chance, B. (1990). Metabolic effects of training in humans: A 31P-MRS study. *Journal of Applied Physiology, 69*(3), 1165-1170.

Lundgren, F., Dahllof, A.G., Schersten, T., & Bylund-Fellensiu, A.C. (1989). Muscle Enzyme adaptation in patients with peripheral arterial insufficiency: Spontaneous adaptation, effect of different treatments and consequences on walking performance. *Clinical Science, 77*, 485-493.

Mannarino, E., Pasqualini, L., Menna, M., Maragoni, G., & Orlandi, U. (1989). Effects of physical training on peripheral vascular disease: A controlled study. *Angiology, 40*(1), 5-10.

Marburger, L.K. (1992). The effects of low-intensity, pain-free exercise on muscle metabolism in patients with peripheral vascular disease as seen by P-31 NMR spectroscopy. *Thesis* for the Degree of Master of Science in Exercise and Sport Sciences, University of Florida, Gainesville, FL.

Radack, K., & Wyderski, R.J. (1990). Conservative management of intermittent claudication. *Annals of Internal Medicine, 113*(2), 135-146.

Saltin, B., & Rowell, L.B. (1980). Functional adaptations to physical activity and inactivity. *Fed Proc, 39* (5), 1506-1513.

Sorlie, D., & Myer, K. (1978). Effect of physical training in intermittent claudication. *Scandinavian Journal of Clinical and Laboratory Investigation, 38*, 217-222.

Williams, L.R., Ekers, M.A., Collins, P.S., & Lee, J.F. (1991). Vascular rehabilitation: Benefits of structured exercise/risk modification program. *Journal of Vascular Surgery, 14*(3), 320-326.

Winder, W.W. (1979). Adaptation of skeletal muscle to exercise. In Lowenthal D.T., Bharadwaha K., Oakes, W.W. (Eds.), *Therapeutics through exercise*. New York: Grune & Stratton.

Integration in Wheelchair Athletics at University of Wisconsin–Whitewater

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Section I: Intramural Sports
Fitness Programming
Recreational Programs

UW-Whitewater has developed one of the most accessible campuses in the United States. It draws many students with disabilities to the campus and provides these students many opportunities to participate in physical activities.

UW-Whitewater provides students with disabilities the opportunity to participate in athletics with and against other students on campus through the intramural programs offered. Intramural sports allow students to organize their own teams and participate in the sports of wheelchair football, wheelchair basketball, and wheelchair soccer. These sports allow any student in a manual or electric wheelchair to participate in an athletic contest. These athletic opportunities not only enhance the students' health, but they also provide a chance for these students to interact with other students in a social setting.

Another program offered to students with disabilities by UW-Whitewater is the chance to enhance their physical fitness through fitness programming. Fitness programs are set up for UW-W's student athletes with disabilities. These athletes practice five or six times a week and on top of that have to work out two to three times a week in the weight room. Some of the activities provided during fitness training include: (1) cross training—working opposition of muscles with a focus on the upper back, (2) muscle balance—work all muscles capable of working, (3) track—focus on range of motion and work to strengthen it, and (4) cardiovascular—work out on the rowing machine to work the muscles of the upper body.

Lastly UW-W offers recreational programs for students and athletes with disabilities. Students with disabilities are able to participate in a variety of fun, challenging, and enjoyable activities. Some activities that have been done in the past include: swimming, camping, whitewater rafting, waterskiing, downhill skiing, basketball, and rock climbing and repelling. The activities are not limited to those done in the past. Suggestions for new and exciting events are always welcome. Not only does UW-Whitewater offer these great opportunities to its students, it also offers many of the same opportunities to youths age 19 and under.

People with disabilities often do not have many of the same opportunities to participate in recreational and athletic events as able bodied people. These programs at UW-W are striving toward narrowing this gap and broadening the opportunity for disabled individuals to participate.

Section II: Physical Education Opportunities in the Classroom, High School and Elementary Levels

With the pendulum swinging toward full inclusion, physical education teachers are required to develop curriculum and specially designed lesson plans for students with physical disabilities. Many high school teachers are currently without experience and ideas on ways to do this. Hopefully these suggestions will help physical educators everywhere.

Often we find that high school students with physical disabilities are not at a level that requires them to be placed in a self-contained physical education class, but they struggle to fit into the lesson plan or curriculum of a regular physical education class. Teachers tend to place these students in weight training for four years. This cannot even compare to the social and physical fitness benefits that a regular physical education class can offer a student. Some ideas to include those students with physical disabilities in the regular class include: (1) badminton—with some adaption in getting to the shuttle, (2) floor hockey—must be careful of the wheelchair and safety of others, and (3) basketball—any drills can be done, games like "PIG" require no adaption, one-on-one would be the only concern and there may need to be some adaption made.

At the elementary level, there are many types of disabilities that a student may have. The severity of the disability can range from mild to severe. Common physical disabilities at the elementary level are cerebral palsy, spinal cord injury, spinabifida, and others that may require a student to use a wheelchair. Total inclusion is not necessarily the answer for every child. The least restrictive environment is what can best suit the child. The best example of this is that each game has to be modified to fit the abilities and needs of the disabled student.

A Systematic Application of Activity-Based Intervention in Physical Education Programming for Preschoolers with Disabilities

Ronald Ricardo Smith, Indiana University

Activity-based intervention (ABI) while used only sparingly in preschool education settings has the potential for use in the physical education setting. Traditionally, the teacher-directed approach has been the educational model of choice for teaching children with disabilities. ABI has the distinction of utilizing the positive attributes of both the traditional analytical approach and the early childhood model to develop a program where activities are child-directed with the teacher working as facilitator rather than director. In this manner the child selects the activity to participate in and ultimately enjoys a greater on-task time performance. An individualized intervention plan for each child is formulated for each play area. The functionality of each goal and objective is interwoven into the basic play activity selected. The teacher reinforces, motivates, and encourages the child to explore, learn, and problem solve. Gross motor development can be addressed by incorporating challenging play activities appropriate for the desired goals and objectives. An assessment of acquired skills can be ascertained by ease of daily logs delineating the progress and recurring active performance of objectives sought from each child at each play area.

Child-directed activities through the ABI model have demonstrated that gross motor development skills can be taught to preschoolers with disabilities in a stress free and rewarding atmosphere. By inducing a fun learning atmosphere in a naturalistic setting the preschooler has the advantage of learning by exploration through self-initiated activities and obtaining functional and generative skills without their conscious knowledge. Activity-based intervention offers great promise for programming in the physical education setting for preschoolers with disabilities as well for non-disabled preschoolers.

A preliminary requirement for introducing a new model of physical education programming should be to establish the philosophical basis for such intervention. As shown below, the programming goals are identical to the definition of physical education as set forth in PL 94-142.

Programming Goals for Preschoolers

A. **Physical and Motor Fitness**
   1. Increase muscular strength by individual activity in play area exercises
   2. Enhance postural control

B. **Fundamental Motor Skills**
   1. Locomotor skills increase all skill levels in running, skipping, galloping, hopping, leaping by individual activity at play areas and group activity at play areas
   2. Object control skills increase skill areas by individual activity at play areas designated circuit play areas

C. **Dance**
   Increase rhythm and pattern movements by music activities at play areas and individual activity at play areas

D. **Aquatics (land-based)**
   Increase and introduce foundation skills by scooter board activities, exercises, play activity

E. **Individual and Team Sports/Games**
   Increase knowledge and participation level by individual activity/circuit play areas and group play activities encouraging teamwork

This study compared the instructional teaching models of direct instruction and activity-based intervention. To provide a basic understanding of the differences a short outline is shown below.

Direct Instruction

Direct instruction techniques emphasize active effort by the teacher to elicit as many correctable or reinforceable responses from students as possible within instruction time constraints.

Features of Direct Instruction

1. Grouping by immediate instructional needs
2. Careful sequencing of academic skills to be taught
3. Modeling
4. Rapid pacing to achieve high density response opportunities
5. Use of response signals to control attention and pace
6. Immediate corrective feedback, including adequate contingent reinforcement
7. Use of choral as well as independent responding
8. Ample monitored practice

Direct instruction has been shown to be an effective tool in educating handicapped and non-handicapped children (Gerber, 1986).

Activity-Based Intervention

The teacher has considerable control over the class. Children work on targeted goals and objectives. The teacher structures the setting so that children receive ample opportunities to practice while encouragement and feedback are provided as needed.

Features of Activity-based Intervention: Child-initiated, Child-directed, "Best practice" for early childhood education, Teacher facilitated, Teacher manipulated, Goal oriented, Play-based, High on-task time performance, "Structured."

Creating individual goals and objectives for each child for each different play area may be time consuming. However, the benefits and ease of recording progress make this a very useful procedure. Below is a sample play area activity for three differently disabled preschoolers. Note that on the side is an area for recording observations and comments concerning activity progress.

Scooter Boards

Nathan Nathan is a 4 year old CP child with predominant involvement on the left side. He is just on the verge of independent walking.

Walk to scooter board
Standing to sit position
Unsupported sitting
Holding on to hula hoop
Forward pull (alternating cycle)
Backward push (alternating cycle)
Lying on stomach to propel
Sitting to stand position

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Patrick Patrick is a 5 year old with motor delays and speech impairment. He is very energetic and enjoys exploration.

Forward pull (alternating cycle)
(quickness)
Backward push (alternating cycle)
(quickness)
Prone propelling (with 4 limbs)
Supine propelling (alternating arms and legs)
Slide on stomach
Spinning

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_____

Eugene Eugene is a 3 year old with moderate mental retardation and visual impairment. He has a very small mental age and acts very much like a baby.

Sitting upright
Time on-task
Forward pull (both legs together)
Backward push (both legs together)
Prone crawl

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Introducing Kids to Sports

Paddy Rossbach, RN
The Joyce Center for Prosthetics and Rehabilitation

The first question we are usually asked when we go for our yearly physical is, "What are you doing for exercise?" This is because the benefits of an appropriate, regular, well rounded, exercise program, coupled with a healthy diet low in fats and sugars and high in fibre, will protect us from many of today's life-threatening diseases such as:

- heart attack
- high serum cholesterol
- high blood pressure
- stroke
- some forms of cancer
- adult onset diabetes
- osteoporosis

A physical disability, however, may reduce someone's ability to exercise and achieve physical fitness. As mobility becomes compromised, those diseases associated with immobility can be added to the list:

- urinary tract infections
- joint contractures
- muscular weakness
- skin pressure sores and infections
- obesity
- depression

Walking, propelling a wheelchair, or even transferring become even more difficult, and the thought of exercise impossible. The need for exercise training for this population is critical, not only to stop this cycle of deconditioning, but to promote general health and maximal functional independence.

The mission of the National Center for Medical Rehabilitation Research at the National Institutes for Health is to develop better medical rehabilitation treatment and assistive devices for people with disabilities. In their published research plan, after discussing the enactment of the ADA and America's commitment to equal opportunities, etc., they say, "before people with disabilities will be able to truly enter the social and economic mainstream of American society they will need to maximize their ability to function physically and behaviorally."

That was rather a long introduction to the title of this talk, "Introducing Kids to Sports." However, we know that children born without a physical disability are encouraged to participate in sports from an early age. Nobody consciously thinks of this as a way for them to keep fit, but it is. It is a fun way to exercise. Sports can teach discipline and team spirit, improve coordination, circulation, body image and self-esteem as well as promote social interaction. They can also help reduce childhood obesity. Sports are the great American way. Just turn on the TV and flip through the stations at any time of the day or night and you will frequently be able to find some sport.

Children with disabilities should not be left out. Programs and activities must be designed in such a way that they can not only participate, but have a fulfilling experience with their non-disabled peers. The primary reason for making exercise and sports programs accessible for everyone is the basic right of all people to be judged according to their capabilities not their disabilities.

How can we make more integrated programs available? A good place to start is with the education and training of the trainers. Disabled Sports/USA is one group that has programs to do just that. "Disabled Kids in Physical Education" is a program that shows parents and schools creative ways of integrating students in sports and physical education. Originally in workshop format, funding for this has now run out, but the workbook and videotape are still available. The originators of the program re-

minded people that since the enactment of the ADA, it is every child's right to participate with his or her friends, that it is no longer acceptable to automatically relegate those with a disability to scoring, pouring the orange juice or some other sideline activity task. The video accompanying the workbook shows ways of achieving this. It is not only about sports; games and dancing are included as an efficient a way of exercising as an aerobic class and certainly more appropriate for children.

The second program is a workshop to provide training for fitness and health care professionals who want either to conduct group exercise programs for individuals with disabilities, or better still integrate them into their regular classes. The primary focus is on aerobic dance or non-impact loading exercises, flexibility, stretching, and resistance training. The course covers the do's and don'ts for each of the disability groups. The difference between the response of the non-disabled and the disabled person's body to exercise is stressed to avoid setting similar goals for everyone: who should exercise in a warmer environment because heat tends to reduce spasticity, who should avoid heat because an impairment in sweating and blood flow can lead to over heating, etc.

My involvement in sports for individuals with disabilities arose because I am a trans-tibial amputee myself. As a child in England, I participated in physical education and sports with my able-bodied peers. There was never any question of my being left out. In lacrosse I tended to play goalie rather than on the wing, and either wicket keeper or another close-in fielding place in cricket, where I made the varsity team. When batting, I had a pinch runner. As I think about inclusion these days, I often wonder how they would have "managed" me if I had been in a wheelchair.

My personal involvement has continued over the years. I learned to ski in my twenties, to scuba dive in my thirties—in fact that is how I met my husband. I made a career change in my forties which was indirectly responsible for the first of my six New York and London Marathons—at age forty eight, and to continue with this pattern, I learned to horseback ride, and started competing in able-bodied dressage competition in my fifties. I sometimes wonder what my sixties will bring forth. The point being, I firmly believe that I owe my continued health and activity level to maintaining a regular exercise program in order to participate in a sport.

ASPIRE (Adolescent Sarcoma Patients' Intense Rehabilitation with Exercise) grew out of a research program conducted at The Hospital for Special Surgery in New York City. It is not-for-profit, and much of the money raised is used to introduce people who have an amputation to exercise and sports. In our research, we had previously demonstrated that an exercise program, which included aerobic conditioning and muscle strengthening, could reduce net energy cost during ambulation. Many individuals who participated in this study began to think in terms of getting back into sports. We looked at what was available, where someone could compete against another person with the same type of disability. Winning would then be dependent on training and conditioning. We founded the Disabled Sports Organization (DSO) for amputees, and started participating in national and international competition.

For the past several years we have taken a team of juniors to compete in The New York State Parks Games for the Physically Challenged on Long Island and The Ability Games of the Junior Orange Bowl in Miami, both developmental, as well as a Learn to Ski/Race program at Jack Frost in the Poconos. The group includes children as young as six who stay with us for up to five days, without their parents. They have all not only survived, children and parents, but in one instance the child left for the plane using a walker, and returned four days later running unaided. Uniforms are provided so there is a sense of team spirit. While at the events we have practice sessions and teach stretching and warm up exercises. Even the youngest may get nervous before an event, but the smiles at the end of a race, or after a good throw, tell their own story. The medals get worn to bed and taken back to school. Trips to events such as these serve more than one purpose.

The interaction between participants is somewhat akin to a prolonged self-help support group. On one of our first trips I asked four girls, ages 8-12 what they had done after I had "tucked them in" for the night. The astounding reply was, "we pulled the covers over the gap between the two beds, crawled underneath, and talked about our operations." Sometimes children who have been somewhat pampered by their parents find it difficult to understand why their roommates on the trip won't wait on them, but say "I don't have my leg on either, get it yourself." They soon learn to be independent.

Each year at The New York State Games, we hold our own private Peewee race. This is where we invite all our youngest aspiring athletes to come and race. All athletes get a mini t-shirt and wear red shorts to match the junior team. The race is run over a short course, and everyone gets a ribbon. The juniors act as role models and cheer everyone on. As these competitors get to be about five years old they start looking forward to competing in the "real" race the next year.

Although I am obviously primarily involved with amputees, the benefits for all the disability groups are apparent at these events. Older role models are always brought in to talk to the kids. They tell them about regional and national events as well as the ultimate challenge, the Paralympics. They are living proof that dreams can come true.

Competitive sports are not for everyone. Some people just want to participate with their able-bodied friends, the school ski day, horseback riding with the family, the local baseball game.

Being as physically fit as possible and achieving athletic excellence goes a long way towards counteracting a feeling of being "handicapped." Danny is six years old; he was born with bilateral fibular hemimelia. He had both feet amputated at eight months. However, from a very early age he was a sports fanatic. He was also very aware that his feet were different and insisted that he was going to have some "just like Mummy's" when he grew up. He was very angry when the facts were explained to him. When his new brother was born he told his parents to cut off the baby's feet. He stopped wearing shorts to school because the other kids called him "toy legs." His parents made sure that he participated in every peewee race, every support group we offered, and encouraged him to try every sport. He tried his first skates while still in diapers, was playing street hockey, on in-line skates, at four and ice hockey at six. He recently learned to ski at our clinic. After two days he was easily negotiating the intermediate slopes. He feels good about himself and already thinks he can do anything he wants to do. It could not have been easy for his parents to watch him struggle, fall and get up only to fall again and again. But by treating him the same as another kid of his age they have given him a feeling of being normal instead of different.

While I encourage all our kids to participate in events specifically for people with disabilities, I also impress upon them the importance of joining in with their non-disabled friends, they may not win, but that doesn't mean they can't enjoy it.

Involving children with disabilities in sports at an early age, prepares them for a healthier adulthood, physically and mentally, by increasing their stamina, improving their body image, and raising their self-esteem. Aren't these the same goals we have for our non-disabled children?